Halo Series Phones (H3P/H3G/H6/H3W/H6W) Administrator Guide for Version R120

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Contents

1. Introduction

Halo series phones (H3P/H3G/H6/H3W/H6W) administrator guide provides general guidance on setting up phone network, provisioning and managing phones.
This guide is not intended for end users, but for administrators with experience in networking who understand the basis of open SIP networks and VoIP endpoint environments.
As an administrator, you can do the following with this guide:

- Phone up a VoIP network and provisioning server.
- Provision the phone with features and settings.
- Upgrade and maintain phones.

The information which is detailed in this guide is applicable to the following Halo series devices running firmware version R120 release with SW version 2.12.00.000.1087.

- Halo series phones, including H3P/H3G/H6/H3W/H6W

The sample is as below:

Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Stack->IP Stack

2. Phone Network

Halo series phones operate on an Ethernet local area network (LAN) or wireless network.

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2.1 IPv4 and IPv6 Network Settings

Halo series phones support IPv4 addressing mode, IPv6 addressing mode.
After connected to the wired network, the phones can obtain the IPv4 or IPv6 network Settings from a Dynamic Host Configuration Protocol (DHCP) server if your network supports it. To make it easier to manage IP Settings, we recommend using automated DHCP which is possible to eliminate repetitive manual data entry.
You can also configure IPv4 or IPv6 network Settings manually.

Note: Halo series phones comply with the DHCPv4 specifications documented in RFC 2131, and DHCPv6 specifications documented in RFC 3315.

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2.1.1 IP Addressing Mode Configuration

The following table lists the parameters you can use to configure IP addressing mode.

Parameter	**LocalEnetcfgIpstack**	**config.<mac>.xml**
Description	It configures the IP addressing mode.	
Permitted Values	IPv4 IPv6	
Default	IPv4	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Stack->IP Stack	

If you change this parameter, the IP phone will reboot to make the change take effect.

2.1.2 IPv4 Configuration

The following table lists the parameters you can use to configure IPv4.

Parameter	**LocalEnetcfgDhcpMode**	**config.<mac>.xml**
Description	It configures the Internet port type for IPv4. **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4.	
Permitted Values	Static Dynamic DynamicAlcatel	
Default	Dynamic	
Web UI	Network->IP parameters->DHCP Mode	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> IPv4 Mode	
Parameter	**LocalEnetcfgIpaddr**	**config.<mac>.xml**
Description	It configures the IPv4 address. Example: LocalEnetcfgIpaddr= 192.168.1.20 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4, and " LocalEnetcfgDhcpMode " is phone to Static.	
Permitted Values	IPv4 Address	
Default	Blank	
Web UI	Network->IP parameters->IP Address	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> IP	
Parameter	**LocalEnetcfgSubnet**	**config.<mac>.xml**
Description	It configures the IPv4 subnet mask. Example: LocalEnetcfgSubnet= 255.255.255.0 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4, and " LocalEnetcfgDhcpMode " is phone to Static.	
Permitted Values	Subnet Mask	
Default	Blank	

Web UI	Network->IP parameters-> Subnet Mask	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> S/net	
Parameter	**LocalEnetcfgRouter**	**config.<mac>.xml**
Description	It configures the IPv4 default gateway. Example: LocalEnetcfgRouter = 192.168.1.254 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4, and "LocalEnetcfgDhcpMode " is phone to Static.	
Permitted Values	IPv4 Address	
Default	Blank	
Web UI	Network->IP parameters-> Gateway	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> Gateway	
Parameter	**DmEnetcfgDns1**	**config.<mac>.xml**
Description	It configures the primary IPv4 DNS server. Example: DmEnetcfgDns1= 202.101.103.55 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4, and "LocalEnetcfgDhcpMode " is phone to Static.	
Permitted Values	IPv4 Address	
Default	Blank	
Web UI	Network->IP parameters-> DNS1	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> DNS1	
Parameter	**DmEnetcfgDns2**	**config.<mac>.xml**
Description	It configures the secondary IPv4 DNS server. Example: DmEnetcfgDns2= 202.101.103.55 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv4, and "LocalEnetcfgDhcpMode " is phone to Static.	
Permitted Values	IPv4 Address	
Default	Blank	
Web UI	Network->IP parameters-> DNS2	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> DNS2	

If you change this parameter, the IP phone will reboot to make the change take effect.

2.1.3 IPv6 Configuration

If you configure the network Settings on the phone for an IPv6 network, you can phone up an IP address for the phone by using SLAAC (ICMPv6), DHCPv6 or by manually entering an IP address. Ensure that your network environment supports IPv6. Contact your ISP for more information. When you enable both SLAAC and DHCPv6 on the phone, the server can specify the IP phone to obtain the IPv6 address and other network Settings either from SLAAC or from DHCPv6, if the SLAAC server is not working, the IP phone will try to obtain the IPv6 address and other network Settings via DHCPv6.

The following table lists the parameters you can use to configure IPv6.

Parameter	**LocalEnetcfgIpv6Mode**	**config.<mac>.xml**
Description	It configures the Internet port type for IPv6. **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv6.	
Permitted Values	Static Dynamic	
Default	Dynamic	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv6 Settings-> IPv6 Mode	
Parameter	**LocalEnetcfgIpaddr6**	**config.<mac>.xml**
Description	It configures the IPv6 address. Example: LocalEnetcfgIpaddr6= 2026:1234:1:1:215:65ff:fe1f:caa **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv6, and " LocalEnetcfgIpv6Mode " is phone to Static.	
Permitted Values	IPv6 Address	
Default	Blank	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv6 Settings-> IP	
Parameter	**LocalEnetcfgPrefixLen6**	**config.<mac>.xml**
Description	It configures the IPv6 prefix. **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv6, and " LocalEnetcfgIpv6Mode " is phone to Static.	
Permitted Values	Integer from 0 to 128	
Default	64	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config ->IPv6 Settings-> Prefix6	
Parameter	**LocalEnetcfgRouter6**	**config.<mac>.xml**
Description	It configures the IPv6 default gateway. Example: LocalEnetcfgRouter6= 3036:1:1:c3c7:c11c:5447:23a6:255	

	Note: It works only if “LocalEnetcfgIpstack” is phone to IPv6, and " LocalEnetcfgIpv6Mode " is phone to Static.	
Permitted Values	IPv6 Address	
Default	Blank	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv4 Settings-> Router	
Parameter	**DmEnetcfgDns1v6**	**config.<mac>.xml**
Description	It configures the primary IPv6 DNS server. Example: DmEnetcfgDns1v6= 3036:1:1:c3c7:c11c:5447:23a6:256 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv6, and " LocalEnetcfgIpv6Mode " is phone to Static.	
Permitted Values	IPv6 Address	
Default	Blank	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv6 Settings-> DNS1	
Parameter	**DmEnetcfgDns2v6**	**config.<mac>.xml**
Description	It configures the secondary IPv6 DNS server. Example: DmEnetcfgDns2v6= 3036:1:1:c3c7:c11c:5447:23a6:256 **Note**: It works only if “LocalEnetcfgIpstack” is phone to IPv6, and " LocalEnetcfgIpv6Mode " is phone to Static.	
Permitted Values	IPv6 Address	
Default	Blank	
Phone UI	Menu->Advanced (default password: 123456)Setting->Network->IP Config->IPv6 Settings-> DNS2	

If you change this parameter, the IP phone will reboot to make the change take effect.

2.2 DHCP Option for IPv4

The IP phone can obtain IPv4-related parameters in an IPv4 network via DHCP option.

Note: For more information on DHCP options, refer to RFC 2131 or RFC 2132.

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2.2.1 Supported DHCP Option for IPv4

The following table lists common DHCP options for IPv4 supported by Halo series phones.

Parameters	DHCP Option	Description
Provision URL	option 66	
Provision URL	option 66	
Provision URL	option 43 ->option 66	
Provision URL	option 43 ->option 67	
DNS server	option 6	
Hostname	option 12	
Domain name	option 15	
SNTP Server	option 42	
802.1Q VLAN ID.	option 132	
802.1p LAYER 2 Priority	option 133	
Timezone	Option 100	
VLAN Id	option 43 ->option 58	VLAN Id

2.2.2 DHCP Option 66/67, Option 43

In Halo R120 release, DHCP option 66 / 67 is optimized, now user can fill the full path in DHCP option 66, then the IP phone can parse the path and download the configuration file from this path.

The usage scenarios for DHCP option 66 and 67 are listed as below for reference:

Option66	Option67	Option43		Result
		Option66	Option67	
http://172.24.190.159		no data		http://172.24.190.159/
http://172.24.190.159	/provisioning			http://172.24.190.159/provisioning
http://172.24.190.159	http://172.24.190.160			http://172.24.190.159/
172.24.190.159				http(s)://172.24.190.159/
172.24.190.159	/provisioning or (172.24.190.160)			http(s)://172.24.190.159/provisioning
172.24.190.159	http://172.24.190.160			http://172.24.190.160
	/provisioning or (172.24.190.160)			http(s)://provisioning
	http://172.24.190.160			http://172.24.190.160
any data		http://172.24.190.161		http://172.24.190.161
		http://172.24.190.161	/provisioning	http://172.24.190.161/provisioning

	http://172.24.190.161	http://172.24.190.162	http://172.24.190.161
	172.24.190.161		http(s)://172.24.190.161
	172.24.190.161	/provisioning or (172.24.190.162)	http(s)://172.24.190.161/provisioning
	172.24.190.161	http://172.24.190.162	http://172.24.190.162
		/provisioning or (172.24.190.162)	http(s)://provisioning
		http://172.24.190.162	http://172.24.190.162

Note: If user configures a relative path with only IP address or domain name for DHCP option 66/67, the default https protocol will be added to the provisioning URL.

2.2.3 DHCP Option 42

Halo series phones support using the NTP server address offered by DHCP.
DHCP option 42 is used to specify a list of NTP servers available to the client by IP address.

The following table lists the parameter you can use to configure DHCP option 42 NTP server address.

Parameter	**DmEnetcfgSntp**	**config.<mac>.xml**
Description	It configures the primary NTP server. Example: DmEnetcfgSntp = 192.168.0.100	
Permitted Values	IPv4 Address	
Default	0.pool.ntp.org	
Web UI	Setting->Time&Date -> SNTP Address	
Parameter	**DmEnetcfgSntp2**	**config.<mac>.xml**
Description	It configures the secondary NTP server. Example: DmEnetcfgSntp2 = 192.168.0.100	
Permitted Values	IPv4 Address	
Default	time.nist.gov	
Web UI	Setting->Time&Date -> SNTP Secondary Address	

2.2.4 DHCP Option 12

You can specify a hostname for the phone when using DHCP. The DHCP client uses option 12 to send a predefined hostname to the DHCP registration server. The name may or may not be qualified with the local domain name (based on RFC 2132). See RFC 1035 for character phone restrictions.

2.2.5 DHCP Option 132

In Halo R120 release, the IP phones support to configure DHCP option 132 to define 802.1Q VLAN ID.

2.2.6 DHCP Option 133

In Halo R120 release, the IP phones support to configure DHCP option 133 to define 802.1p LAYER 2 Priority for SIP/RTP.

2.2.7 DHCP Option 100

In Halo R120 release, the IP phones support to configure DHCP option 100 to define timezone.

The format of the POSIX specifier is <name><offset><dst name><dst offset><dstrule>

- name is the name of the timezone when not in daylight savings (eg GMT, PST, NZST)
- offset is the offset added to the local time to get UTC, specified as [+|-]hh[:mm[:ss]] (eg 0, 8, -12)
- dst name is the name of the timezone when in daylight savings (eg BST, PDT, NZDT)
- dst offset is the offset added to the local time to get UTC during daylight savings, similarly specified as [+|-]hh[:mm[:ss]]

Some examples:

- London: GMT0BST1,M3.5.0/1:00:00,M10.5.0/2:00:00
- Los Angeles: PST8PDT,M3.2.0/2:00:00,M11.1.0/2:00:00
- New Zealand: NZST-12NZDT,M9.5.0/2:00:00,M4.1.0/3:00:00

2.2.8 Support VCI definition

User can define the VCI by the below parameter in configuration file:

Parameter	**LocalEnetcfgVciValue**	**config.<mac>.xml**
Description	It configures the phone VCI info.	
Permitted Values	TEXT	
Default	aledevice	

2.3 DHCP Option for IPv6

The IP phone can obtain IPv6-related parameters in an IPv6 network via DHCP option.

Parameters	DHCP Option	Description
Provision URL	option 59	one Provision URL address or FQDN
Provision URL	option 17	Full path Provision URL
DNS server	option 23	
Hostname	option 39	
Domain name	option 24	
SNTP Server	option 31	

2.3.1 DHCP Option 59 and Custom Option

During the startup, the phone will automatically detect the option 17 or option 59 for obtaining the provisioning server address. The priority of obtaining the provisioning server address is as follows: option 17-> option 59.

2.4 VLAN

The purpose of VLAN configurations on the IP phone is to insert a tag with VLAN information to the packets generated by the IP phone. When VLAN is properly configured for the ports (Internet port and PC port) on the IP phone, the IP phone will tag all packets from these ports with the VLAN ID. The switch receives and forwards the tagged packets to the corresponding VLAN according to the VLAN ID in the tag as described in IEEE Std 802.3.

VLAN on IP phones allows simultaneous access to a regular PC. This feature allows a PC to be daisy chained to an IP phone and the connection for both PC and IP phone to be trunked through the same physical Ethernet cable.

In addition to manual configuration, the IP phone also supports automatic discovery of VLAN via LLDP or DHCP. The assignment takes effect in this order: assignment via LLDP, assignment via DHCP, then manual configuration.

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2.4.1 LLDP Configuration

LLDP (Linker Layer Discovery Protocol) is a vendor-neutral Link Layer protocol, which allows IP phones to receive and/or transmit device-related information from/to directly connected devices on the network that are also using the protocol, and store the information about other devices.

When LLDP feature is enabled on IP phones, the IP phones periodically advertise their own information to the directly connected LLDP-enabled switch. The IP phones can also receive LLDP packets from the connected switch. When the application type is “voice”, the IP phones decide whether to update the VLAN configurations obtained from the LLDP packets. When the VLAN configurations on the IP phones are different from the ones sent by the switch, the IP phones perform an update and reboot. This allows the IP phones to plug into any switch, obtain their VLAN IDs, and then start communications with the call control.

The following table lists the parameters you can use to configure LLDP.

Parameter	**LocalLldpcfgVlanEnabled**	**config.<mac>.xml**
Description	It enables or disables the LLDP (Linker Layer Discovery Protocol) feature on the IP phone.	
Permitted Values	true false	
Default	true	
Web UI	Network -> LLDP -> VLAN Acquirement	
Phone UI	Advanced Setting -> Network -> LLDP -> VLAN Acquirement	

2.4.2 Manual VLAN Configuration

VLAN is disabled on IP phones by default. You can configure VLAN for the Internet port and PC port manually. Before configuring VLAN on the IP phone, you need to obtain the VLAN ID from your network administrator.

The following table lists the parameters you can use to configure VLAN manually.

Parameter	**LocalEnetcfgVlanEnable**	**config.<mac>.xml**
Description	It enables or disables the VLAN for the Internet port.	
Permitted Values	true false	
Default	false	
Web UI	Network -> IP Parameters -> LAN VLAN	
Phone UI	Advanced Setting -> Network -> IP Config -> Vlan -> Vlan Config ->Use VLAN	
Parameter	**LocalEnetcfgVlan**	**config.<mac>.xml**
Description	It configures the VLAN ID for the Internet port. **Note**: It works only if “LocalEnetcfgVlanEnable” is phone to true.	
Permitted Values	Integer from 1 to 4095	
Default	4095	
Web UI	Network -> IP Parameters -> LAN VLAN Number	
Phone UI	Advanced Setting -> Network -> IP Config -> Vlan -> Vlan Config ->ID	
Parameter	**LocalEnetcfgDataVlanEnable**	**config.<mac>.xml**
Description	It enables or disables the VLAN for the PC port.	
Permitted Values	true false	
Default	false	
Web UI	Network -> IP Parameters -> PC VLAN	
Phone UI	Advanced Setting -> Network -> IP Config -> Vlan ->Data Vlan Config ->Use VLAN	
Parameter	**LocalEnetcfgDataVlan**	**config.<mac>.xml**
Description	It configures the VLAN ID for the PC port. **Note**: It works only if “LocalEnetcfgDataVlanEnable” is phone to true.	
Permitted Values	Integer from 1 to 4095	
Default	4095	
Web UI	Network -> IP Parameters -> PC VLAN Number	
Phone UI	Advanced Setting -> Network -> IP Config -> Vlan -> Data Vlan Config ->ID	

2.4.3 DHCP VLAN

Halo series phones support VLAN discovery via DHCP. The predefined option 43-> option 58 is used to supply the VLAN ID by default. And Option 58 has higher priority than option 132.

2.5 Wi-Fi

Wi-Fi feature enables you to connect the phones to the organization's wireless network. The wireless network is more convenient and cost-effective than the wired network. Wi-Fi feature is applicable to Halo series phones H3W/H6/H6W.
When the Wi-Fi feature is enabled, the IP phone will automatically scan the available wireless networks. All the available wireless networks will display in scanning list on the phone screen. You can store up to 5 frequently used wireless networks on your phone.

You can configure for Halo series phones H3W/H6/H6W: Advanced Setting -> Wi-Fi -> Wi-Fi Manager (phone user interface).

Note: H3W and H6W support built-in Wi-Fi, but do not support USB dongle Wi-Fi. They should be distinguished from H6 (which only support USB dongle Wi-Fi).
To use Wi-Fi feature on Halo series phones H6, make sure the Wi-Fi USB dongle is properly connected to the USB port on the phone. The Wi-Fi USB dongle should be purchased separately.

In Halo R120 release, H3W/H6/H6W phone supports for WiFi auto provision deployment.

The following table lists the parameters you can use to configure Wi-Fi.

Parameter	**WIFIFunctionEnable**	**config.<mac>.xml**
Description	It enables or disables the function of WIFI.	
Permitted Values	0 - Disabled 1 - Enable	
Default	1	
Parameter	**WIFIEnable**	**config.<mac>.xml**
Description	It enables or disables WIFI.	
Permitted Values	0 - Disabled 1 - Enable	
Default	0	
Phone UI	Advanced Setting->Wi-Fi->Enable WiFi	
Parameter	**NetworkRedundancy**	**config.<mac>.xml**
Description	It configures preferentially network type.	
Permitted Values	0 - WIFI only 1 - WIFI preferentially 2 - Wired preferentially	
Default	1	
Parameter	**WIFI[1,5]SSID**	**config.<mac>.xml**
Description	It configures The AP SSIDs.	
Permitted Values	TEXT	
Default	empty	
Phone UI	Advanced Setting->Wi-Fi->Wi-Fi Manager	
Parameter	**WIFI[1,5]Authentication**	**config.<mac>.xml**
Description	It configures the authentication method of AP.	
Permitted Values	0 - NONE 1 - WPA/WPA2 PSK	

	2 - WEP	
Default	0	
Phone UI	Advanced Setting->Wi-Fi->Wi-Fi Manager	
Parameter	**WIFI[1,5]Password**	**config.<mac>.xml**
Description	If “WPA/WPA2 PSK” is chosen, this will be used. The length should be >=8 and <=63. If “WEP” is chosen, this will be used. This should be 5 ASCII for WEP64 and 13 ASCII for WEP128.	
Permitted Values	password	
Default	empty	
Phone UI	Advanced Setting->Wi-Fi->Wi-Fi Manager	
Parameter	**WIFI[1,5]Priority**	**config.<mac>.xml**
Description	It configures the priority of AP.	
Permitted Values	1 - 1 2 - 2 3 - 3 4 - 4 5 - 5	
Default	0	

2.6 Network Address Translation (NAT)

Network Address Translation (NAT) is a function that allows multiple devices to share the same public, routable IP address to establish connections over the Internet. NAT is present in many broadband access devices to translate public and private IP address.

Halo series phones can work with Rport type of NAT.

2.6.1 Rport Configuration

Halo series phones support rport described in RFC 3581. It allows a client to request that the server sends the response back to the source port from which the request came.
Rport feature depends on support from a SIP server.

The following table lists the parameter you can use to configure rport.

Parameter	**SIPServerXRportEnabled**	**config.<mac>.xml**
Description	It enables or disables the NAT Rport feature.	
Permitted Values	true false	
Default	false	
Web UI	Account -> Advanced -> Rport	

2.7 Internet Port and PC Port

Halo series phones support two Ethernet ports: Internet port and PC port. You can enable or disable the PC port on the IP phones.

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2.7.1 Supported Transmission Methods

Three optional methods of transmission configuration for IP phone Internet port and PC port :

- Auto-negotiate
- Half-duplex
- Full-duplex

Auto-negotiate is configured for both Internet and PC ports on the IP phone by default.

2.7.2 Internet Port and PC Port Configuration

The following table lists the parameters you can use to configure Internet port and PC port.

Parameter	**LocalEthlcfgLanAuto**	**config.<mac>.xml**
Description	It configures the transmission method of the Internet port.	
Permitted Values	true false	
Default	true	
Web UI	Network -> Port-> LAN Auto	
Phone UI	Advanced Setting -> Network -> Ethernet -> LAN -> Auto	
Parameter	**LocalEthlcfgLanSpeed**	**config.<mac>.xml**
Description	It configures the transmission method of the Internet port.	
Permitted Values	10 100	
Default	100	
Web UI	Network -> Port-> LAN Speed	
Phone UI	Advanced Setting -> Network -> Ethernet -> LAN -> LAN speed	
Parameter	**LocalEthlcfgLanDuplex**	**config.<mac>.xml**
Description	It configures the transmission method of the Internet port.	
Permitted Values	Half Full	
Default	Full	
Web UI	Network -> Port-> Lan Duplex	
Phone UI	Advanced Setting -> Network -> Ethernet -> LAN -> LAN duplex	
Parameter	**LocalEthlcfgPcAuto**	**config.<mac>.xml**
Description	It configures the transmission method of the PC port.	
Permitted Values	true false	
Default	true	
Web UI	Network -> Port-> PC Auto	
Phone UI	Advanced Setting -> Network -> Ethernet -> PC -> Auto	

Parameter	LocalEthlcfgPcSpeed	config.<mac>.xml
Description	It configures the transmission method of the PC port.	
Permitted Values	10 100	
Default	100	
Web UI	Network -> Port-> PC Speed	
Phone UI	Advanced Setting -> Network -> Ethernet -> PC ->PC speed	
Parameter	LocalEthlcfgPcDuplex	config.<mac>.xml
Description	It configures the transmission method of the PC port.	
Permitted Values	Half Full	
Default	Full	
Web UI	Network -> Port-> PC Duplex	
Phone UI	Advanced Setting -> Network -> Ethernet -> PC -> PC duplex	

2.8 VPN

Halo series phones use OpenVPN to achieve VPN feature. After you configure VPN feature on the IP phone, the IP phone will act as a VPN client and use the certificates to authenticate with the VPN server.

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2.8.1 OpenVPN Related Files

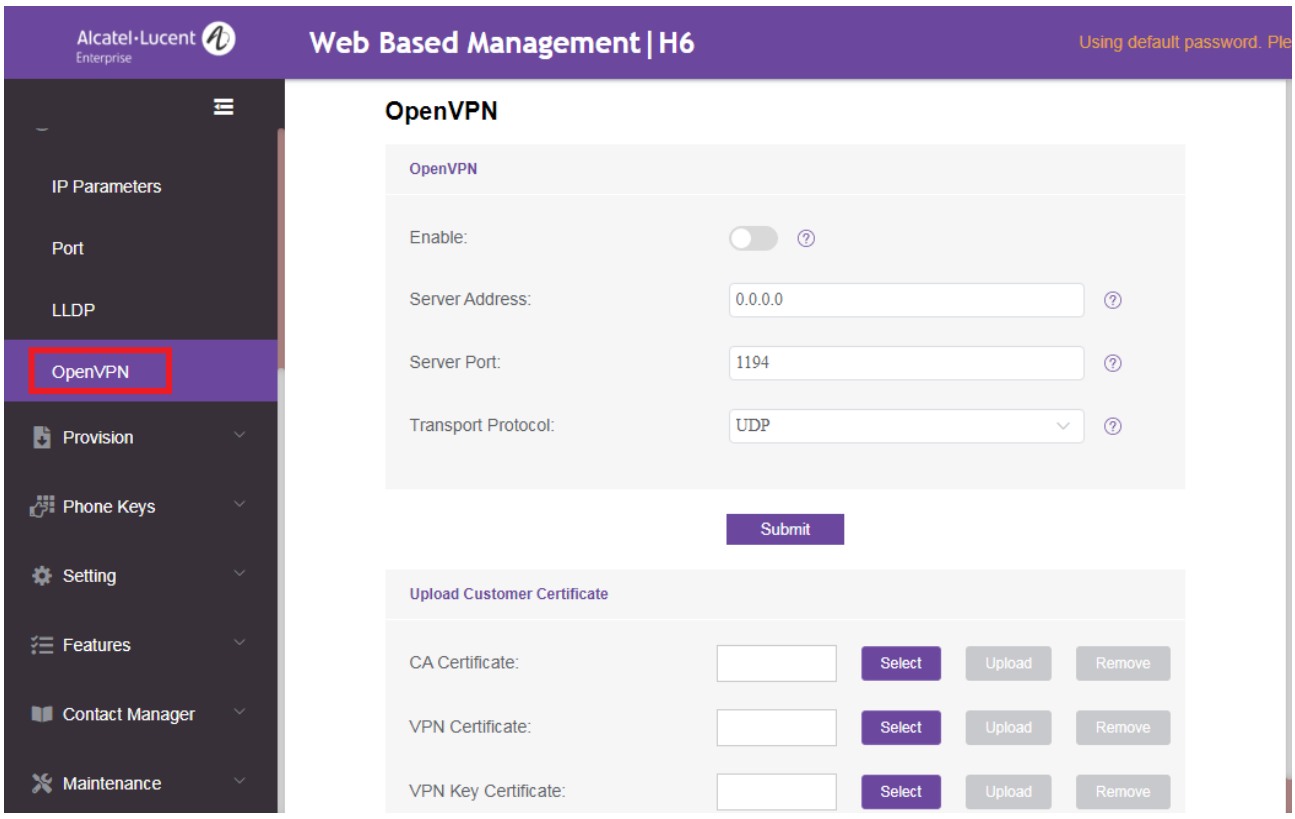
The VPN-related files include certificates (ca.crt and client.crt), key (client.key) and the configuration file (vpn.cnf) of the VPN client.

The following table lists the unified directories of the OpenVPN certificates and key in the configuration file (vpn.cnf) for Halo series phones:

VPN Files	Description	Unified Directories
ca.crt	CA certificate	/config/cert/openvpn/ ca.crt
client.crt	Client certificate	/config/cert/openvpn/client.crt
client.key	Private key of the client	/config/cert/openvpn/client.key

2.8.2 OpenVPN Configuration

You can configure the OpenVPN feature at the path: Network -> OpenVPN (phone web interface) for Halo series phones.

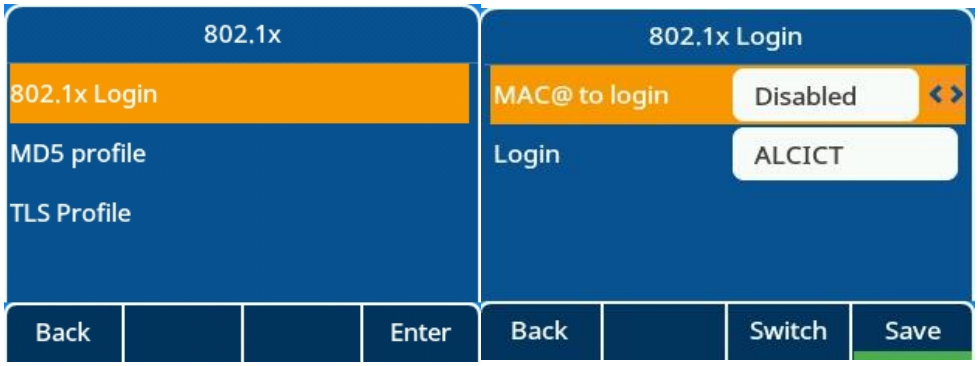


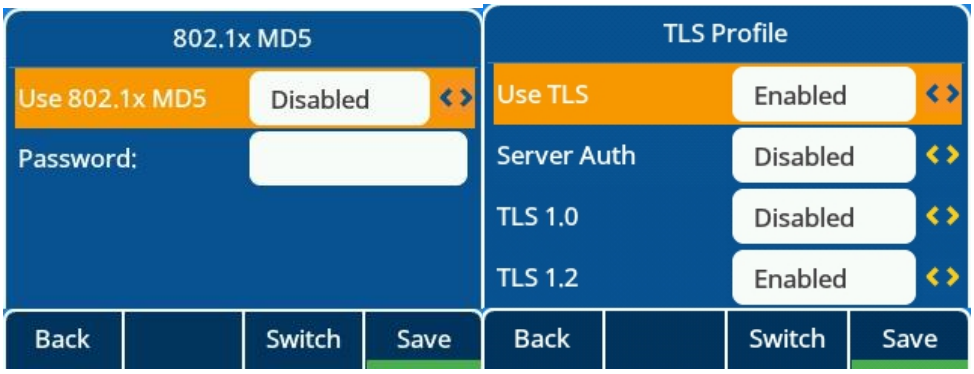
2.9 802.1x Authentication

Halo series phones support the following protocols for 802.1X authentication:

- EAP-MD5
- EAP-TLS (requires Device and CA certificates, requires no password)

You can configure the 802.1x feature at the path: For Halo series phones at the path, Advanced Settings -> Network -> 802.1x.





3. Phone Provisioning

This chapter provides basic instructions for setting up your IP phones with a provisioning server.

In Halo R120 release, H3P/H3G/H6/H3W/H6W phones support TFTP, HTTP and HTTPS protocols to download configuration files and binary files.

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3.1 Web User Interface

You can configure IP phones via web user interface, a web-based interface that is especially useful for remote configuration.
Because features and configurations vary by phone models and firmware versions, options available on each page of the web user interface can vary as well. Note that the features configured via web user interface are limited. Therefore, you can use the web user interface in conjunction with a central provisioning method and phone user interface.
When configuring IP phones via web user interface, you require a user name and password for access.
The default username/password is admin/123456.

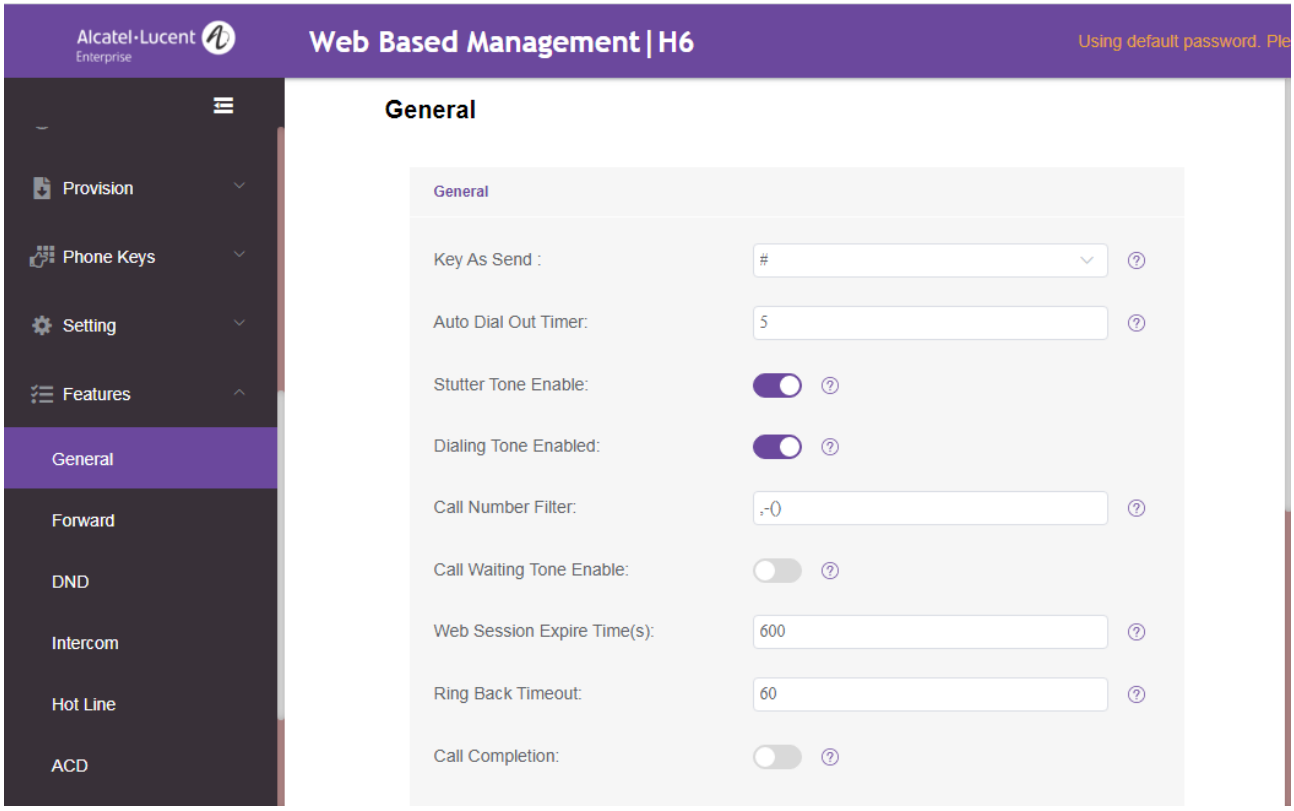
3.1.1 Accessing the Web User Interface Procedure

1. Find the phone IP address. Press the OK key when the phone is idle for Halo series phones.
2. Enter the IP address in the address bar of a web browser on your PC.
For example, for IPv4: https://192.168.0.10; for IPv6: https://[2005:1:1:1:215:65ff:fe64:6e0a]
3. Enter the user name and password.
4. Click Login.

3.1.2 Navigating the Web User Interface

When you log into the web user interface successfully, the phone status is displayed on the first page of the web user interface. You can click the navigation bar to customize or click Log Out to log out of the web user interface.

The following figure is an example when you navigate to Features->General:



3.2 Phone User Interface

Phone user interface makes configurations available to users and administrators; but the Advanced/Advanced Settings option is only available to administrators and requires an administrator password (default: admin).

3.3 Configuration Files

Halo series phones support two configuration template files: Common CFG file and MAC-Oriented CFG file.

3.3.1 Common CFG File

Common CFG file, named config.xml, contains parameters that affect the basic operation of the IP phone, such as language and volume. It will be effective for all IP phones.

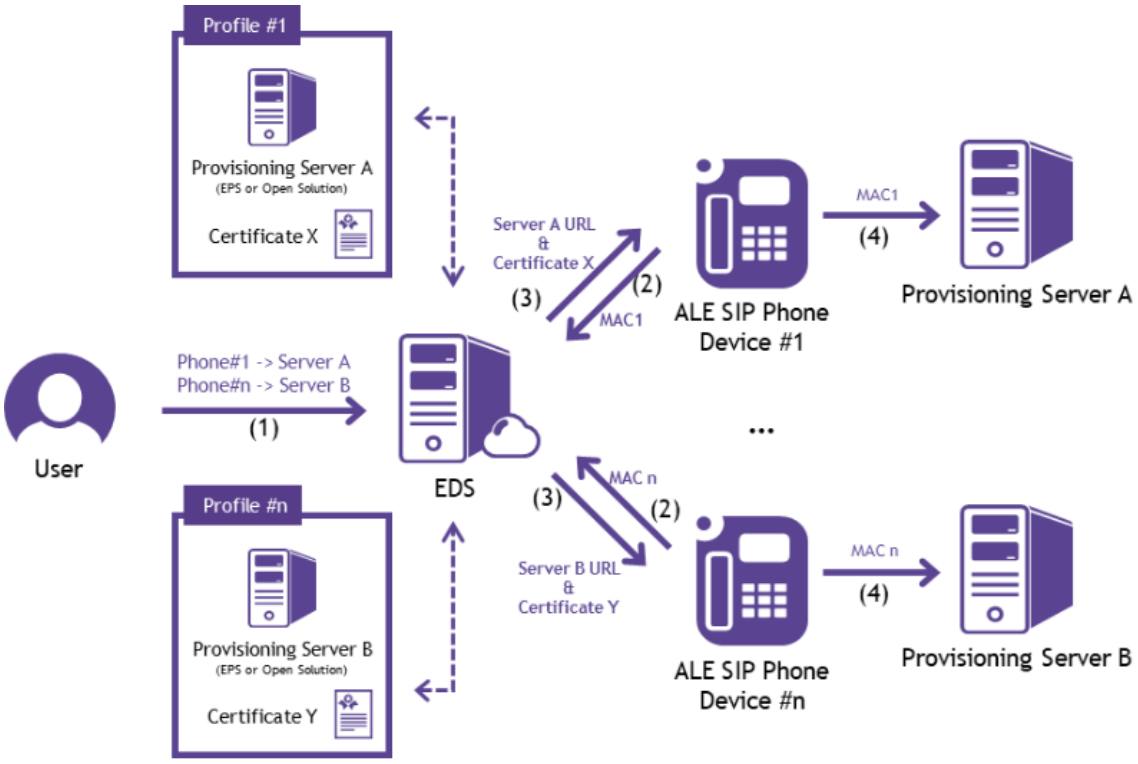
3.3.2 MAC-Oriented CFG File

MAC-Oriented CFG file, which is named after the MAC address of the IP phone. For example, if the MAC address of an IP phone is 3C28A6200088, the name of MAC-Oriented CFG file is config. 3C28A6200088.xml.
It contains parameters unique to a particular phone, such as account registration. It will only be effective for a MAC-specific IP phone.

3.4 EDS (Easy Deployment Server)

EDS (Easy Deployment Server) is a server which provides the information for ALE SIP devices to connect to the provision server. It has a web based interface for the user to manage such information. The user needs to input the provision server address for the device. If the server is SSL/TLS based, a certificate is also needed. The MAC address of SIP device is associated with provisioning server address and certificate. When the SIP devices connect to EDS server, it can acquire provision server information from it and download configuration file from provision server automatically.

3.4.1 EDS Global Architecture



1. Register MAC and server address which want to connect
2. Phone carries MAC and connects to EDS
3. Redirection to provisioning server
4. Phone connects to Provisioning server

3.5 Provisioning Methods

Halo series phones provides two ways to provision your phones:

- Manual Provisioning: provisioning via the local phone user interface or web user interface.
- Central Provisioning: provisioning through configuration files stored in a central provisioning server.

The method you use depends on how many phones need to be deployed and what features and Settings to be configured. Manual provisioning on the web or phone user interface does not contain all of the phone Settings available with the centralized method. You can use the web user interface method in conjunction with a central provisioning method and phone user interface method. We recommend using centralized provisioning as your primary provisioning method when provisioning multiple phones.

4. Firmware Upgrade

There are three methods of firmware upgrade:

- Manually, from the local system for a single phone via web user interface.
- Automatically, from the provisioning server for a mass of phones.
- USB upgrade

Topics

Firmware for Each Phone Model
Firmware Upgrade Configuration
USB upgrade

4.1 Firmware for Each Phone Model

You can download the latest firmware online.

The following table lists the associated and latest firmware name for each IP phone model.

IP Phone Model	Firmware Name
H3P	sipH3_6X
H3G	sipH3_6X
H6	sipH3_6X
H3W	sipH3_6X
H6W	sipH3_6X

4.2 Firmware Upgrade Configuration

Before upgrading firmware, you need to know the following:

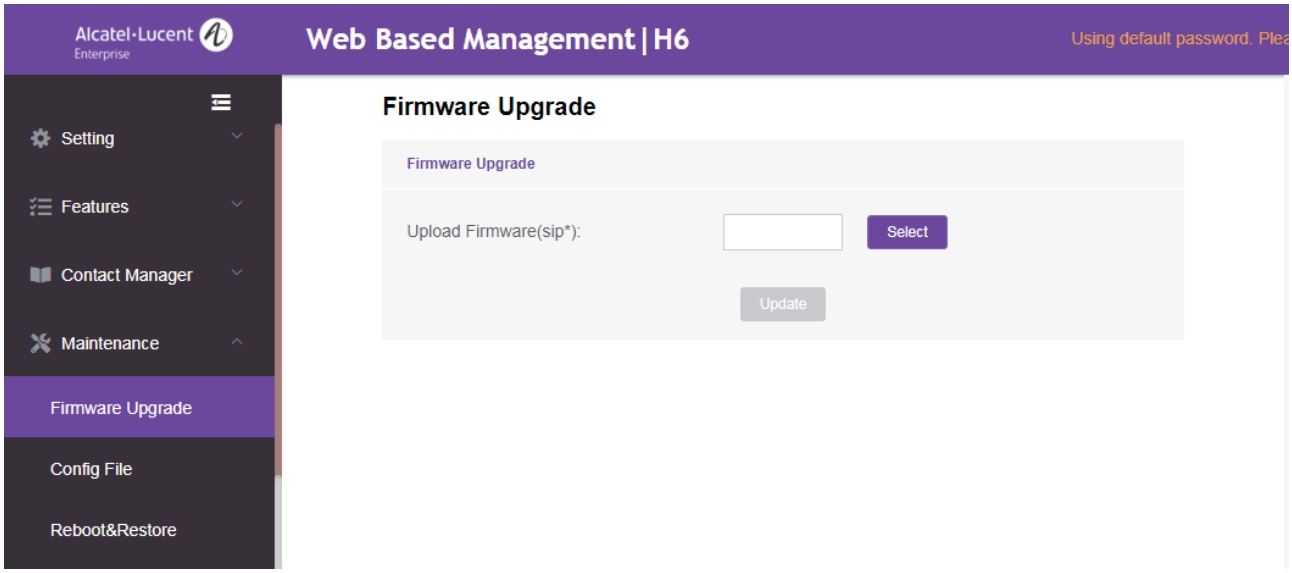
- Do not close and refresh the browser when the IP phone is upgrading firmware via web user interface.
- Do not unplug the network cables and power cables when the IP phone is upgrading firmware.

4.2.1 Firmware upgrade from provisioning server with configuration file

The following table lists the parameters you can use to upgrade firmware.

Parameter	**DmEnetcfgUpgradeFile**	**config.<mac>.xml**
Description	It configures the access URL of the firmware file. Example: DmEnetcfgUpgradeFile = http://192.168.1.20	
Permitted Values	URL within 511 characters	
Default	blank	

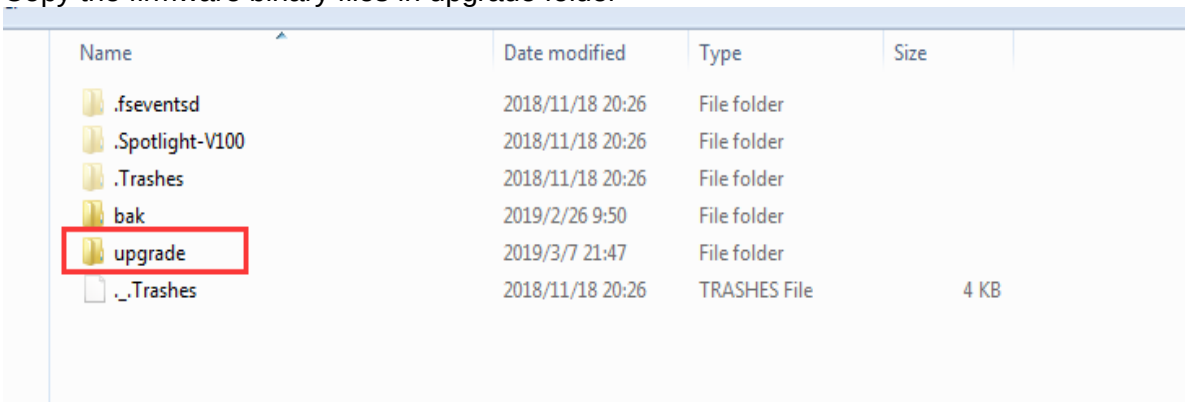
4.2.2 Firmware upgrade via web user interface



4.3 USB upgrade

Procedure:

1. Prepare a moveable USB disk with FAT32 format
2. Create a folder and name it “upgrade”
3. Copy the firmware binary files in upgrade folder



4. Plug U disk into the phone’s USB port
5. Power on the phone
6. For Halo series phones during step 1 of initialization process, pressing “4”+”7”+”8”+”*” keys at the same time. Release all keys until all the LEDs are lighted on.
7. Phone will reboot and enter upgrading process.

5. Security Features

This chapter provides information for configuring the security features of the phone.

Topics

5.1 Auto Logout

Auto logout time (default 5 minutes) defines how long to log out the web user interface automatically when you do not perform any actions on web user interface. Once logging out, you must re-enter username and password for web access authentication.

5.2 Change Administrator password

When logging into the web user interface or access advanced Settings on the phone, the default username and password for administrator is “admin/123456”.
For security reasons, you should change the default administrator password as soon as possible.

Topics

5.2.1 Change Administrator password Configuration

The following table lists the parameters you can use to configure the administrator password.

Parameter	DmAdminPasswd	config.<mac>.xml
Description	It configures the password of the administrator.	
Permitted Values	String within 64 characters	
Default	123456	
Web UI	Maintenance -> Change Password	

5.3 Phone Lock

You can lock the IP phone to prevent it from unauthorized use. Once the IP phone is locked, anyone must enter the password to unlock it. The default password is “0000”.

Note: Once the phone is locked, the user can input the password “0000” to unlock the phone. But if the default password is modified and lost, the user can reset the parameter “ScreenLockPassword” in configuration file.

Topics

5.3.1 Operation Behaviors on Lock Phone

When the phone is locked, you are allowed to initiate a new call to the emergency number.

The following table lists the parameters you can use to configure the emergency number.

Parameter	EmergencyNumber	config.<mac>.xml
Description	It configures the emergency phone numbers when screen is locked.	
Permitted Values	Number	
Default	blank	
Web UI	Setting -> Phone Lock -> Emergency Call	

5.3.2 Phone Lock Configuration

The following table lists the parameters you can use to configure the phone lock.

Parameter	ScreenAutomaticLockEnable	config.<mac>.xml
Description	It enables or disables the phone lock feature.	
Permitted Values	true false	
Default	false	
Web UI	Setting -> Phone Lock -> Automatic Lock	
Phone UI	Basic Setting -> Phone Lock	
Parameter	SipScreenSaverTimeout	config.<mac>.xml
Description	It configures screen Saver timeout.	

Permitted Values	[60,18000]	
Default	300	
Web UI	Setting -> Phone Lock -> Automatic Lock Time	
Phone UI	Basic Setting -> Display -> Screen saver -> Wait Time	
Parameter	**ScreenLockPassword**	**config.<mac>.xml**
Description	It configures screen lock password.	
Permitted Values	Integer	
Default	0000	
Web UI	Setting -> Phone Lock -> Unlock Password	

5.4 Transport Layer Security (TLS)

TLS is a commonly-used protocol for providing communications privacy and managing the security of message transmission, allowing IP phones to communicate with other remote parties and connect to the HTTPS URL for provisioning in a way that is designed to prevent eavesdropping and tampering.
Halo series phones support TLS version 1.0, 1.1 and 1.2. When TLS is enabled for an account, the SIP message of this account will be encrypted.

Topics

5.4.1 Supported Cipher Suites

A cipher suite is a named combination of authentication, encryption, and message authentication code (MAC) algorithms used to negotiate the security Settings for a network connection using the TLS/SSL network protocol.

Halo series phones support the following cipher suites:

- DHE-RSA-AES256-SHA
- DHE-DSS-AES256-SHA
- AES256-SHA
- EDH-RSA-DES-CBC3-SHA
- EDH-DSS-DES-CBC3-SHA
- DES-CBC3-SHA
- DES-CBC3-MD5
- DHE-RSA-AES128-SHA
- DHE-DSS-AES128-SHA
- AES128-SHA
- RC2-CBC-MD5
- IDEA-CBC-SHA
- DHE-DSS-RC4-SHA
- RC4-SHA
- RC4-MD5
- RC4-64-MD5
- EXP1024-DHE-DSS-DES-CBC-SHA
- EXP1024-DES-CBC-SHA
- EDH-RSA-DES-CBC-SHA
- EDH-DSS-DES-CBC-SHA
- DES-CBC-SHA
- DES-CBC-MD5

- EXP1024-DHE-DSS-RC4-SHA
- EXP1024-RC4-SHA
- EXP1024-RC4-MD5
- EXP-EDH-RSA-DES-CBC-SHA
- EXP-EDH-DSS-DES-CBC-SHA
- EXP-DES-CBC-SHA
- EXP-RC2-CBC-MD5
- EXP-RC4-MD5
- ECDHE

5.4.2 Supported Trusted and Server Certificates

The IP phone can serve as a TLS client or a TLS server. In TLS feature, we use the terms trusted and server certificate. These are also known as CA and device certificates.

The TLS requires the following security certificates to perform the TLS handshake:

- Trusted Certificate: When the IP phone requests a TLS connection with a server, the IP phone should verify the certificate sent by the server to decide whether it is trusted based on the trusted certificates list. The IP phone has 58 built-in trusted certificates. You can upload 10 custom certificates at most. The format of the trusted certificate files must be *.pem,*.cer,*.crt and *.der and the maximum file size is 5MB.
- Server Certificate: When clients request a TLS connection with the IP phone, the IP phone sends the server certificate to the clients for authentication. The IP phone has two types of built-in server certificates: a unique server certificate and a custom server certificate. You can only upload one server certificate to the IP phone. The old server certificate will be overridden by the new one. The format of the server certificate files must be *.p12 and *.pfx and the maximum file size is 5MB.
- A unique server certificate: It is unique to an IP phone (based on the MAC address) and issued by the ALE Certificate Authority (CA).
- A custom server certificate: User can upload the custom certificate for authentication.

The IP phone can authenticate the server certificate based on the trusted certificates list. The trusted certificates list and the server certificates list contain the default and custom certificates.

Common Name Validation feature enables the IP phone to mandatorily validate the common name of the certificate sent by the connecting server. The Security verification rules are compliant with RFC 2818.

Topic
Supported Trusted Certificates

5.4.3 Supported Trusted Certificates

Halo series phones trust the following CAs by default:

- entrust_g2_ca.pem
- CybertrustPublicSureServerSVCA.pem
- SFSRootCAG2.pem
- GeoTrust_Primary_CA_G2_ECC.pem
- AddTrustExternalCARoot.pem
- comodosslca.pem
- DigiCertHighAssuranceEVRootCA.pem
- GeoTrust_Global_CA.pem
- thawte_Primary_Root_CA.pem
- DSTRootCAX3.pem
- DigiCert_Global_Root_CA.pem
- letsencryptauthorityx2.pem

- isrgrootx1.pem
- SVRSecureG3.pem
- GeoTrust_Primary_CA.pem
- Root_R2.pem
- sfroot_g2.pem
- TCTrustCenterClass3CAII.pem
- Root_R1.pem
- TCTrustCenterClass4CAII.pem
- DigiCertGlobalRootG2.pem
- Thawte_Personal_Freemail_CA.pem
- BaltimoreCyberTrustRoot.pem
- entrust_ev_ca.pem
- Thawte_Server_CA.pem
- AmazonRootCA2.pem
- DigiCertTrustedRootG4.pem
- VeriSign_Class_3_Public_Primary_Certification_Authority_G4.pem
- DigiCertAssuredIDRootG3.pem
- DigiCert_SHA2_Secure_Server_CA.pem
- StartComCertificationAuthorityG2.pem
- GeoTrust_Universal_CA2.pem
- AmazonRootCA3.pem
- comodorsadomainvalidationsecureserverca.pem
- Thawte_Premium_Server_CA.pem
- DigiCertAssuredIDRootG2.pem
- TCTrustCenterClass2CAII.pem
- GeoTrust_Universal_CA.pem
- StartComCertificationAuthority.pem
- entrust_2048_ca.pem
- DigiCertAssuredIDRootCA.pem
- VeriSign_Class_3_Public_Primary_Certification_Authority_G5.pem
- letsencryptauthorityx1.pem
- thawte_Primary_Root_CA_G3_SHA256.pem
- VeriSign_Class_4_Public_Primary_Certification_Authority_G3.pem
- VeriSign_Universal_Root_Certification_Authority.pem
- thawte_Primary_Root_CA_G2_ECC.pem
- VeriSign_Class_3_Public_Primary_Certification_Authority_G3.pem
- TCTrustCenterUniversalCAI.pem
- AmazonRootCA1.pem
- comodorsacertificationauthority.pem
- VeriSign_Class_2_Public_Primary_Certification_Authority_G3.pem
- DigiCertGlobalRootG3.pem
- AmazonRootCA4.pem
- Geotrust_PCA_G3_Root.pem
- VerizonPublicSureServerCAG14_SHA2.pem
- VeriSign_Class_1_Public_Primary_Certification_Authority_G3.pem
- EquifaxSecureGlobaleBusinessCA1.pem

Note: ALE endeavors to maintain a built-in list of most common used CA Certificates. Due to memory constraints, we cannot ensure a complete phone of certificates. If you are using a certificate from a commercial Certificate Authority not in the list above, you can send a request to your local distributor. At this point, you can upload your particular CA certificate into your phone.

5.4.4 TLS Configuration

The following table lists the parameters you can use to configure TLS.

Parameter	SIPGroupXTransportMode	config.<mac>.xml

Description	It configures the type of transport protocol.	
Permitted Values	0:UDP 1:TCP 2:TLS 3: DNS-NAPTR, if no server port is given, the IP phone performs the DNS NAPTR and SRV queries for the service type and port.	
Default	0	
Web UI	Account ->Basic -> Transport Mode	
Parameter	**SIPSslVersion**	**config.<mac>.xml**
Description	It configures the TLS version the IP phone uses to authenticate with the server.	
Permitted Values	0:All 1:TLS1.0 2:TLS1.2	
Default	0	
Parameter	**SIPSslPeerVerify**	**config.<mac>.xml**
Description	It enables or disables the peer verify for sip server.	
Permitted Values	true false	
Default	false	
Web UI	SIP Features->General-> SIPs Peer Verify	
Parameter	**SIPCertificateUrl**	**config.<mac>.xml**
Description	It configures the SIP server certificate download url.	
Default	blank	
Web UI	Maintenance -> Certificate Management -> Upload Customer Certificate	

5.5 Secure Real-Time Transport Protocol (SRTP)

Secure Real-Time Transport Protocol (SRTP) encrypts the audio streams during VoIP phone calls to avoid interception and eavesdropping. The parties participating in the call must enable SRTP feature simultaneously. When this feature is enabled on both phones, the type of encryption to use for the session is negotiated between the IP phones. This negotiation process is compliant with RFC 4568.
When you place a call on the enabled SRTP phone, the IP phone sends an INVITE message with the RTP/RTCP encryption algorithm to the destination phone. As described in RFC 3711, RTP/RTCP streams may be encrypted using an AES (Advanced Encryption Standard) algorithm.

Example of the RTP encryption algorithm carried in the SDP of the INVITE message:

```
m=audio 6000 RTP/SAVP 0 8 18 9 101
a=crypto:1 AES_CM_128_HMAC_SHA1_80 inline:NzFlNTUwZDk2OGVlOTc3YzNkYTkwZWVkMTM1YWFj
a=crypto:2 AES_CM_128_HMAC_SHA1_32 inline:NzkyM2FjNzQ2ZDgxYjg0MzQwMGVmMGUxMzdmNWFm
a=crypto:3 F8_128_HMAC_SHA1_80 inline:NDliMWIzZGE1ZTAwZjA5ZGFhNjQ5YmEANTMzYzA0
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=rtpmap:9 G722/8000
a=fmtp:101 0-15
a=rtpmap:101 telephone-event/8000
a=ptime:20
a=sendrecv
```

The callee receives the INVITE message with the RTP encryption algorithm, and then answers the call by responding with a 200 OK message which carries the negotiated RTP encryption algorithm.

Example of the RTP encryption algorithm carried in the SDP of the 200 OK message:

```
m=audio 6000 RTP/SAVP 0 101
a=rtpmap: 0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=crypto:1 AES_CM_128_HMAC_SHA1_80 inline:NGY4OGViMDYzZjQzYTNiOTNkOWRiYzRlMjM0Yzcz
a=sendrecv
a=ptime:20
a=fmtp:101 0-15
```

When SIP-TLS/SRTP is enabled on both IP phones, RTP streams will be encrypted, and a lock icon appears on the LCD screen of each IP phone after successful negotiation.

Topic

SRTP Configuration

5.5.1 SRTP Configuration

The following table lists the parameters you can use to configure the SRTP.

Parameter	SIPGroup1SrtpWorkingMode	config.<mac>.xml
Description	It configures whether to use voice encryption service.	
Permitted Values	0:None 1:Best effort 2:Strict	
Default	0	
Web UI	Account -> Advanced -> SRTP Working Mode	

5.6 SSH activation

It is possible to open a secure remote connection through SSH to access the phone for test and debug purposes. SSH connections are possible by default.

Topics

SSH session configuration

5.6.1 SSH session configuration

The following table lists the parameters you can use to configure the SSH session.

Parameter	DmSecucfgSsh	config.<mac>.xml
Description	It enables or disable the SSH session.	
Permitted Values	true false	
Default	true	
Web UI	Maintenance ->Security -> SSH Activation	

5.7 HTTPS peer verify

When the phone downloads the common configuration file from the provisioning server, the IP phone can enable or disable the authentication of the server certificate based on the trusted certificates list.

Topics

5.7.1 HTTPS peer verify configuration

The following table lists the parameters you can use to configure the HTTPS peer verify.

Parameter	HttpVerifyPeer	config.<mac>.xml
Description	It enables or disable HTTPS peer verify.	
Permitted Values	0 1	
Default	1	
Web UI	Maintenance -> Certificate Management -> HTTPS Peer Verify	

5.8 Encrypting and Decrypting Files

Halo IP phones support to download encrypted config.xml/config.<MAC>.xml file(s) from http/https server.
To encrypt/decrypt files, you may have to configure an AES key.

The following table lists the parameters you can use to configure the encryption and decryption.

Parameter	EncryptionAesKey	config.<mac>.xml
Description	It configures the plaintext AES key for encrypting/decrypting the config/config.<MAC>.xml file.	
Permitted Values	TEXT	
Default	empty	
Phone UI	Advanced setting->Auto Provision->AES Key	

6. Directory

Halo series phones provides several types of phone directories.

Topics

6.1 Local Directory

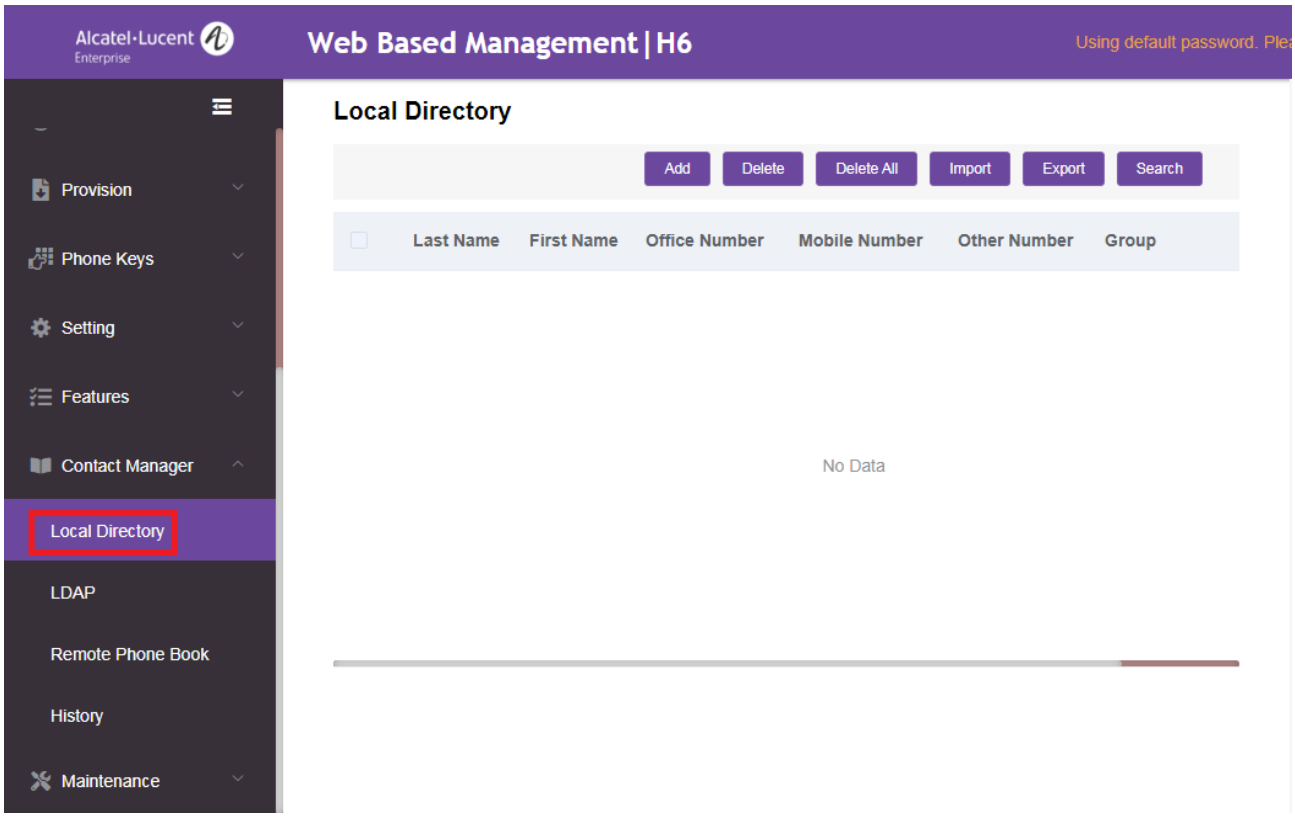
Halo series phones maintain a local directory that you can use to store contacts. The local directory can store up to 1000 contacts and 50 groups.

Contacts and groups can be added either one by one, or in batch using a local contact file. Halo series phones support *.xml format contact files, and you can customize the *.xml format contact file.

Topics

6.1.1 Local Contact File Customization

You can download local contact template from the phone Web UI.



Topics

6.1.1.1 Local Contact File Elements and Attributes

The following table lists the elements and attributes you can use to add groups or contacts in the local contact file. We recommend you do not edit these elements and attributes.

Elements	Attributes	Description
Group	display_name	Specify the group name. For example: All Contacts, Blacklist or Friend
Contact	display_name	Specify the office number
	mobile_number	Specify the mobile number
	other_number	Specify the other number
	line	Specify a registered line for this contact for calling.

		Valid Values: 1~15/1~8; Halo series phones support 8 accounts
	group_id_name	Specify which group the contact adds to. Built-in group: All Contacts, External Directory(Only M7 in Halo series phone support) Custom group: XXX (for example, Friend)
	default_photo	Built-in avatar: Resource: avatar name

6.1.1.2 Customizing Local Contact File

1. Open the local contact file.
2. To add a group, add 〈GroupName>Fn</GroupName> to the file. Each starts on a new line.
3. To add a contact.

For example:

```
〈Contact>
        <FirstName>三</FirstName>
        <LastName>张</LastName>
        <Account>1</Account>
        <GroupName>All Contacts</GroupName>
        <AvatarSmall>avatar_small_13</AvatarSmall>
        <AvatarBig>avatar_large_13</AvatarBig>
        <OfficeNumber>13003</OfficeNumber>
        <MobileNumber>1860000001</MobileNumber>
        <HomeNumber></HomeNumber>
        <OtherNumber></OtherNumber>
    </Contact>
```

4. Save the changes and upload this file to the phone Web UI or place this file to the provisioning server.

6.1.2 Local Contact Files Upload

You can upload local contact files to add multiple contacts at a time.

The following table lists the parameters you can use to upload the local contact files and resource.

Parameter	**PhonebookUrl**	**config.<mac>.xml**
Description	It configures the access URL of the local contact file (*.xml). Example: PhonebookUrl = http://192.168.10.25/contact.xml	
Permitted Values	URL within 511 characters	
Default	blank	

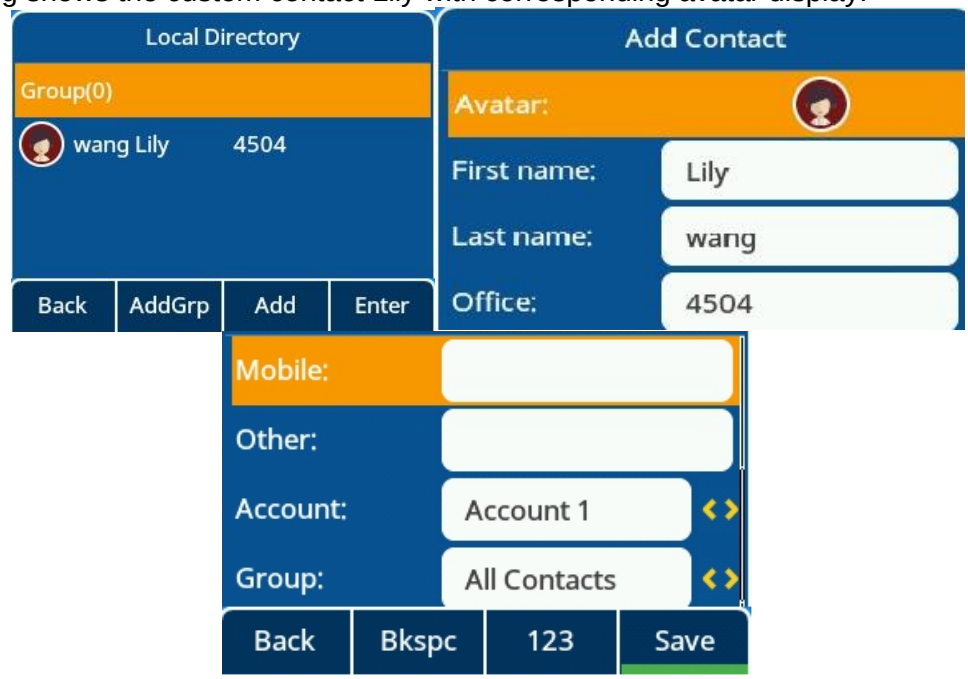
6.1.3 Example: Adding Contacts Using a Contact File

The following example shows the configuration for customizing a local contact file.

Customize the contact file “contact.xml” and place the contact file “contact.xml” to the provisioning server http://192.168.10.25 .

Example:
PhonebookUrl = http://192.168.10.25/directory.xml
During auto provisioning, the IP phone connects to the provisioning server “192.168.10.25”, and downloads the local contact file “directory.xml” .You can view the contacts on their phone, and specify the avatar for a contact.

The following shows the custom contact Lily with corresponding avatar display:



6.2 Lightweight Directory Access Protocol (LDAP)

LDAP is an application protocol for accessing and maintaining information services for the distributed directory over an IP network. You can configure the IP phones to interface with a corporate directory server that supports LDAP version 2 or 3. The following LDAP servers are supported:

- Microsoft Active Directory
- Sun ONE Directory Server
- Open LDAP Directory Server
- Microsoft Active Directory Application Mode (ADAM)

Topics
LDAP Attributes
LDAP Configuration

6.2.1 LDAP Attributes

The following table lists the most common attributes used to configure the LDAP lookup on IP phones.

Abbreviation	Name	Description
gn	givenName	First name
cn	commonName	LDAP attribute is made up from given name joined to surname.

sn	surname	Last name or family name
dn	distinguishedName	Unique identifier for each entry
dc	dc	Domain component
-	company	Office phone number
-	telephoneNumber	Company or organization name
mobile	mobilephoneNumber	Mobile or cellular phone number
ipPhone	IPphoneNumber	Home phone number

6.2.2 LDAP Configuration

The following table lists the parameters you can use to configure LDAP.

Parameter	**LDAPEnabled**	**config.<mac>.xml**
Description	It enables or disables the LDAP feature on the IP phone.	
Permitted Values	true false	
Default	false	
Web UI	Contact Manager -> LDAP -> LDAP Enable	
Parameter	**LDAPServerUrl**	**config.<mac>.xml**
Description	It configures the LDAP Server URL.	
Permitted Values	URL within 511 characters	
Default	blank	
Web UI	Contact Manager -> LDAP -> LDAP Server Url	
Parameter	**LDAPSearchBase**	**config.<mac>.xml**
Description	It configures the LDAP base DN used for search.	
Permitted Values	String within 99 characters	
Default	o=Alcatel,o=directoryRoot	
Web UI	Contact Manager -> LDAP -> LDAP Search Base	
Parameter	**LDAPFieldsMapping**	**config.<mac>.xml**
Description	It configures LDAP Fields Mapping.	
Default	{"firstname":"givenname", "name":"sn", "officephone":"telephonenumber"}	
Permitted Values	String within 99 characters	
Web UI	Contact Manager -> LDAP -> LDAP Fields Mapping	
Parameter	**LDAPFilter**	**config.<mac>.xml**
Description	It configures LDAP search rules.	
Permitted Values	String within 99 characters	
Default	(|(givenName=*%1*)(sn=*%1*))	
Web UI	Contact Manager -> LDAP -> LDAP Filter	
Parameter	**LDAPLogin**	**config.<mac>.xml**
Description	This login is used in conjunction with the password, if the LDAP server requires authentication.	

Permitted Values	String within 99 characters	
Default	blank	
Web UI	Contact Manager -> LDAP -> LDAP User Name	
Parameter	**LDAPPassword**	**config.<mac>.xml**
Description	This password is used in conjunction with the LDAP login, if the LDAP server requires authentication.	
Permitted Values	String within 99 characters	
Default	blank	
Web UI	Contact Manager -> LDAP -> LDAP Password	
Parameter	**LDAPSearchTimeout**	**config.<mac>.xml**
Description	It configures the LDAP search timeout.	
Permitted Values	NUMERIC[1,30]	
Default	5	
Web UI	Contact Manager -> LDAP -> LDAP Search Timeout(1-30s)	
Parameter	**LDAPConnectTimeout**	**config.<mac>.xml**
Description	It configures the LDAP connection timeout.	
Permitted Values	NUMERIC[1,30]	
Default	3	
Web UI	Contact Manager -> LDAP -> LDAP Connection Timeout(1-30s)	
Parameter	**LDAPMaxHits**	**config.<mac>.xml**
Description	It configures the max match number of LDAP query.	
Permitted Values	NUMERIC[1,1000]	
Default	50	
Web UI	Contact Manager -> LDAP -> LDAP Max Hits(1-1000)	
Parameter	**LDAPCallLookup**	**config.<mac>.xml**
Description	It enables or disables LDAP query during call.	
Permitted Values	false true	
Default	false	
Web UI	Contact Manager -> LDAP -> LDAP Call Query Enable	

6.3 Directory Search Settings

The feature is implemented as below:

- If the first character is digit, the IP phone will search whether phoneNumber1/phoneNumber2/phoneNumber3/firstName/lastName contain/startwith the entered character(s);
- If the first character is not digit, the IP phone will search whether firstName/lastName contain/startwith the entered character(s);

Topics

Directory Search Settings Configuration

6.3.1 Directory Search Settings Configuration

The following table lists the parameters you can use to configure directory search settings.

Parameter	DirectorySearchType	config.<mac>.xml
Description	It configures the search type when searching the contact in Local Directory or Remote Phone Book.	
Permitted Values	0: contains 1: startwith	
Default	0	

6.4 Remote Phone Book

The remote phone book is a centrally maintained phone book, stored on the remote server. Users only need to configure the access URL of the remote phone book. The IP phone can establish a connection with the remote server and download the phonebook, then display the remote phone book entries on the phone.

Halo IP phones support up to 6 remote phone books.

Topics

Remote Phone Book Configuration

6.4.1 Remote Phone Book Configuration

The following table lists the parameters you can use to configure remote phone book.

Parameter	RemotePhoneBookEnable	config.<mac>.xml
Description	It configures to enable or disable the remote phone book feature.	
Permitted Values	false true	
Default	false	
Web UI	Contact Manager->Remote Phone Book-> RemotePB Enable	
Parameter	RemotePhoneBookForceUpdateMode	config.<mac>.xml
Description	It configures to enable or disable the forced update mode.	
Permitted Values	0 - disable the forced update mode 1 - enable the forced update mode	
Default	0	
Parameter	RemotePhoneBookPeriodUpdateEnable	config.<mac>.xml
Description	It configures to enable or disable the periodically update mode.	
Permitted Values	false true	
Default	false	
Web UI	Contact Manager->Remote Phone Book-> Periodically Update Enable	
Parameter	RemotePhoneBookInterval	config.<mac>.xml
Description	It configures the update interval.	
Permitted Values	NUMERIC	
Default	3600	
Web UI	Contact Manager->Remote Phone Book-> Periodically Update Interval(Seconds)	
Parameter	RemotePhoneBook[1-6]GroupName	config.<mac>.xml

Description	It configures the name of the x group remote phone book, if set, is displayed on MMI.	
Permitted Values	TEXT	
Default	empty	
Phone UI	Directory->Remote Directory	
Web UI	Contact Manager->Remote Phone Book-> Display Name	
Parameter	**RemotePhoneBook[1-6]Url**	**config.<mac>.xml**
Description	It configures the download address of the x group of remote phone book is used to download the contact.	
Permitted Values	TEXT	
Default	empty	
Web UI	Contact Manager->Remote Phone Book-> Remote Phone Book URL	
Parameter	**RemotePhoneBook[1-6]AuthName**	**config.<mac>.xml**
Description	It configures the x group is the authenticated account of remote phone book.	
Permitted Values	TEXT	
Default	empty	
Parameter	**RemotePhoneBook[1-6]AuthPwd**	**config.<mac>.xml**
Description	It configures the x group is the authentication password for remote phone book.	
Permitted Values	TEXT	
Default	empty	

6.5 Contact backup

The IP phone will automatically upload contact file at regular intervals to the provisioning server or a specific server. If the contact file exists on the server, it will be overwritten. The IP phone will request to download the contact. <MAC>. file according to its MAC address from the server during auto provisioning.

The following table lists the parameters you can use to back up the local contacts.

Parameter	**BackupUploadTime**	**config.<mac>.xml**
Description	It configures the time between uploading a backup file.	
Permitted values	TEXT	
Default	3600	
Parameter	**BackupURL**	**config.<mac>.xml**
Description	It configures the url which is used to upload and download the backup file.	
Permitted values	TEXT	
Default	empty	
Parameter	**BackupuploadMethod**	**config.<mac>.xml**
Description	It configures the way to upload files(post/put).	
Permitted values	0 - put 1 - post	

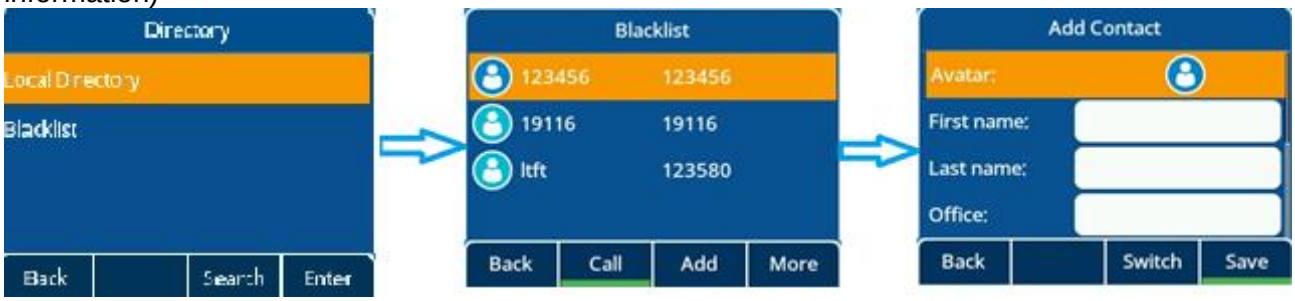
Default	0	
Parameter	**ContactBackupEnable**	**config.<mac>.xml**
Description	It configures to enable or disable contactBackup.	
Permitted values	false true	
Default	false	

6.6 Blacklist

When user never wants to receive calls from somebody, the phone number can be added into the blacklist of directory. Then all calls from the phone number which is included in the blacklist will be refused automatically.

- The feature can be configured in phone UI(Directory->Blacklist):

Go into the directory menu, then select: Blacklist -> Add ->Save (after input the phone number information)



7. Audio Features

This chapter describes the audio sound quality features and options you can configure for the IP phone.

Topics

7.1 Dial Tone

You can configure to enable or disable the dialing tone.

Topics

7.1.1 Dialing tone Configuration

The following table lists the parameters you can use to enable or disable the dialing tone.

Parameter	DialingToneEnabled	config.<mac>.xml
Description	It enables or disables the dialing tone.	
Permitted Values	true false	
Default	true	
Web UI	Setting -> General -> Dialing Tone Enabled	

7.2 Stutter tone

The phone can play a specific dial tone when it has new/unreaded voice messages received.

Topics

Stutter tone Configuration

7.2.1 Stutter tone Configuration

Parameter	StutterToneEnabled	config.<mac>.xml
Description	It enables or disables the stutter tone.	
Permitted Values	true false	
Default	true	
Web UI	Setting -> General -> Stutter Tone Enable	

7.3 Ring Tones

Ring tones are used to play for internal/external incoming calls. You can select a built-in ring tone for the phone system or specific line registration.
You can also specify a period of time after which the IP phone will stop ringing if the call is not answered.

Topics

Ringtone Configuration

7.3.1 Ringtone Configuration

The following table lists the parameters you can use to configure ringtone.

Parameter	AudioRingInternalChoice	config.<mac>.xml
Description	It configures internal call ring melody.	
Permitted Values	/usr/share/ringdata/ring00.wav /usr/share/ringdata/ring01.wav /usr/share/ringdata/ring02.wav /usr/share/ringdata/ring03.wav /usr/share/ringdata/ring04.wav /usr/share/ringdata/ring05.wav /usr/share/ringdata/ring06.wav /usr/share/ringdata/ring07.wav /usr/share/ringdata/ring08.wav /usr/share/ringdata/ring09.wav /usr/share/ringdata/ring10.wav /usr/share/ringdata/ring11.wav	

	/usr/share/ringdata/ring12.wav /usr/share/ringdata/ring13.wav /usr/share/ringdata/ring14.wav /usr/share/ringdata/ring15.wav	
Default	/usr/share/ringdata/ring00.wav	
Web UI	Setting -> Ringing -> Internal Melody	
Phone UI	Basic Setting -> Sound -> Ringing -> Int Melody	
Parameter	**AudioRingExternalChoice**	**config.<mac>.xml**
Description	It configures external call ring melody.	
Permitted Values	/usr/share/ringdata/ring00.wav /usr/share/ringdata/ring01.wav /usr/share/ringdata/ring02.wav /usr/share/ringdata/ring03.wav /usr/share/ringdata/ring04.wav /usr/share/ringdata/ring05.wav /usr/share/ringdata/ring06.wav /usr/share/ringdata/ring07.wav /usr/share/ringdata/ring08.wav /usr/share/ringdata/ring09.wav /usr/share/ringdata/ring10.wav /usr/share/ringdata/ring11.wav /usr/share/ringdata/ring12.wav /usr/share/ringdata/ring13.wav /usr/share/ringdata/ring14.wav /usr/share/ringdata/ring15.wav	
Default	/usr/share/ringdata/ring00.wav	
Web UI	Setting -> Ringing -> External Melody	
Phone UI	Basic Setting -> Sound -> Ringing -> Ext Melody	
Parameter	**AudioRingProgressive**	**config.<mac>.xml**
Description	It configures ring progressive (only support 0, 2).	
Permitted Values	0:NoProgressive 2:NormalProgressive	
Default	0	
Web UI	Setting -> Ringing -> Progressive Ringing	
Phone UI	Basic Setting -> Sound -> Ringing -> Ring mode -> Progressive Ringing	
Parameter	**AudioRingSilent**	**config.<mac>.xml**
Description	It enable or disables ring silent mode.	
Permitted Values	true false	
Default	false	
Web UI	Setting -> Ringing -> Silent Mode	
Phone UI	Basic Setting -> Sound -> Ringing -> Ring mode ->Silent mode	
Parameter	**AudioRingBeep**	**config.<mac>.xml**
Description	It configures ring beep(only support 0, 1, 3).	
Permitted Values	0:BeepNone 1:BeepSingle 3:BeepTriple	

Default	0
Web UI	Setting -> Ringing -> Beeps Before Ringing
Phone UI	Basic Setting -> Sound -> Ringing -> Beep

7.4 Distinctive Ring Tones

The feature of distinctive ring tones allows certain incoming calls to trigger IP phones to play distinctive ring tones. The IP phone inspects the INVITE request for an "Alert-Info" header when receiving an incoming call. If the INVITE request contains an "Alert-Info" header, the IP phone strips out the URL or keyword parameter and maps it to the appropriate ring tone.

Topics

7.4.1 Supported Alert-Info Headers Format

Halo series phones support Alert-Info headers in four formats: Bellcore-drN, ringtone-N (or MyMelodyN), and info=info text; x-line-id=0.

Note: If the Alert-Info header contains multiple types of keywords, the IP phone will process the keywords in the following order:
<urn:alert:tone:internal/external> >> ringtone/ MyMelody >> Bellcore-dr >> info=.

Topics

7.4.1.1 Alert-Info: Bellcore-drN

When the Alter-Info header contains the keyword “Bellcore-drN”, the IP phone will play the desired ring tone.

The following table identifies the corresponding ring tone:

Value of N	Ring Tone (features.alert_info_tone = 1)	Ring Tone (features.alert_info_tone = 0)
0	Bellcore-dr0	ring00
1	Bellcore-dr1	ring01
2	Bellcore-dr2	ring02
3	Bellcore-dr3	ring03
4	Bellcore-dr4	ring04
5	Bellcore-dr5	ring05
6	Bellcore-dr6	ring06
7	Bellcore-dr7	ring07
8	Bellcore-dr8	ring08
9	Bellcore-dr9	ring09
10	Bellcore-dr10	ring10
11	Bellcore-dr11	ring11
12	Bellcore-dr12	ring12
13	Bellcore-dr13	ring13
14	Bellcore-dr14	ring14

N<1 or N>15		ring00

Examples:

```
Alert-Info: test/Bellcore-dr1
Alert-Info: Bellcore-dr1
Alert-Info: Bellcore-dr1;x-line-id=1
```

7.4.1.2 Alert-Info: ringtone-N/Alert-Info: ringtone-RingN.wav (or Alert-Info: MyMelodyN/Alert-Info: MyMelodyRingN.wav)

When the Alter-Info header contains the keyword “ringtone-N/ringtone-RingN” or “MyMolodyN/MyMelodyRingN”,the IP phone will play the corresponding local ring tone (RingN.wav), or play the first local ring tone (Ring1.wav) in about 10 seconds if “N” is greater than 15 or less than 1.

Examples:

```
Alert-Info: ringtone-2
Alert-Info: ringtone-Ring2.wav
Alert-Info: ringtone-2;x-line-id=1
Alert-Info: MyMelody2
Alert-Info: MyMelodyRing2.wav
Alert-Info: MyMelody2;x-line-id=1
```

The following table identifies the corresponding local ring tone:

Value of N	Ring Tone
0	ring00
1	ring01
2	ring02
3	ring03
4	ring04
5	ring05
6	ring06
7	ring07
8	ring08
9	ring09
10	ring10
11	ring11
12	ring12
13	ring13
14	ring14
N<1 or N>15	ring00

7.4.1.3 Alert-Info: info=info text; x-line-id=0

When the Alert-Info header contains an info text, the IP phone will map the text with the Internal Ringer Text preconfigured on the IP phone, and then play the ring tone associated with the Internal Ringer Text (the ring tone can be configured by the parameter. If no internal ringer text maps, the IP phone will play the preconfigured local ring tone in about 10 seconds.

Example:

```
Alert-Info: info=family; x-line-id=0
```

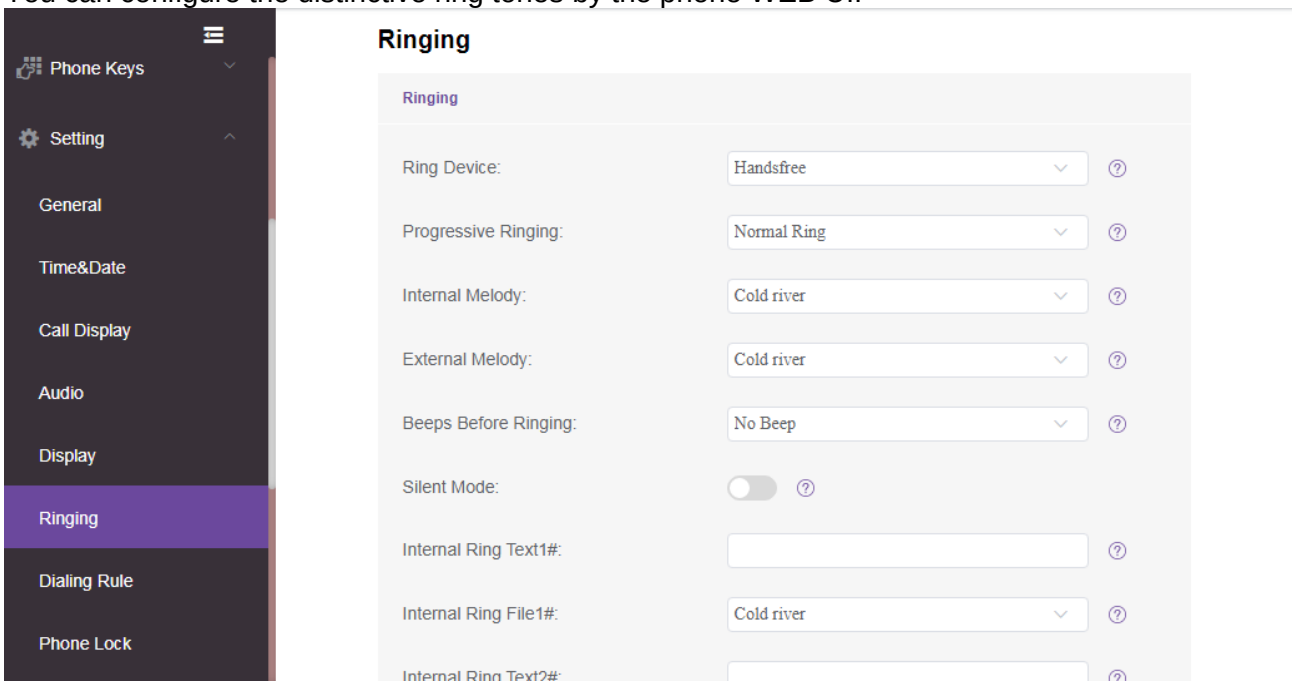
7.4.1.4 Alert info for Auto Answer

If the INVITE request contains the following type of strings, the IP phone will answer incoming calls automatically without playing the ring tone:

- Answer-Mode: Auto
- Alert-Info: info = alert-autoanswer
- Call-Info: answer-after = 0 (or Call-Info: Answer-After = 0)

7.4.2 Distinctive Ring Tones Configuration

You can configure the distinctive ring tones by the phone WEB UI.



7.5 Ringer Device

The IP phones support either or both speaker and Headset ringer devices. You can configure which ringer device to be used when receiving an incoming call. For example, if the ringer device is phone to Headset, ring tone will be played through your Headset.
If the ringer device is phone to Headset or Headset&Speaker, the headset (either a wired Headset, or USB Headset) should be connected to the IP phone and the Headset mode also should be activated in advance.

Topic
Ringer Device Configuration

7.5.1 Ringer Device Configuration

The following table lists the parameters you can use to configure ringer device.

Parameter	AudioRingDevice	config.<mac>.xml
Description	It configures Audio Ring Device.	
Permitted Values	0: handsfree 1: Headset 2: handsfree_plus_Headset	
Default	0	
Web UI	Setting -> Ringing -> Ring Device	
Phone UI	Basic Setting -> Sound -> Ringing -> Ring Device	

7.6 Audio Volume

Topics

7.6.1 Ringer Volume Configuration

The following table lists the parameters you can use to configure ringer volume.

Parameter	AudioRingVolume	config.<mac>.xml
Description	It configures Ring volume level.	
Permitted Values	[0,9]	
Default	7	
Phone UI	Basic Setting -> Sound -> Ringing -> level	

7.7 Tones

When receiving a message, the IP phone will play a warning tone. You can customize tones or select specialized tone phones (vary from country to country) to indicate different conditions of the IP phone.

Topics

7.7.1 Supported Tones

The default tones used on IP phones are the UK tone phones. Available tone phones for IP phones:

- 0:UK
- 1:France
- 2:Germany
- 3:Italy
- 4:Spain
- 5:Dutch
- 6:Portugal
- 7:Canada
- 8:US
- 9:Hungary
- 10:Czec
- 11:Slovakia
- 12:Slovenia
- 13:Estonia
- 14:Poland
- 15:Lithuania
- 16:Latvia
- 17:Turkey
- 18:Greece
- 19:Russia
- 20:China(Mainland)
- 21:China(Hongkong)
- 22:China(Taiwan)
- 23:Thailand
- 24:Korea

- 25:Japan

7.7.2 Tones Configuration

The following table lists the parameters you can use to configure tones.

Parameter	AudioToneCountry	config.<mac>.xml
Description	It configures country standard for call progress tone.	
Permitted Values	0:UK 1:France 2:Germany 3:Italy 4:Spain 5:Dutch 6:Portugal 7:Canada 8:US 9:Hungary 10:Czec 11:Slovakia 12:Slovenia 13:Estonia 14:Poland 15:Lithuania 16:Latvia 17:Turkey 18:Greece 19:Russia 20:China(Mainland) 21:China(Hongkong) 22:China(Taiwan) 23:Thailand 24:Korea 25:Japan	
Default	0	
Web UI	Setting -> Audio -> Country Tone	

7.8 Audio Codecs

CODEC is an abbreviation of Compress-Decompress, capable of coding or decoding a digital data stream or signal by implementing an algorithm. The object of the algorithm is to represent the high-fidelity audio signal with a minimum number of bits while retaining the quality. This can effectively reduce the frame size and the bandwidth required for audio transmission.
The audio codec that the phone uses to establish a call should be supported by the SIP server. When placing a call, the IP phone will offer the enabled audio codec list to the server and then use the audio codec negotiated with the called party according to the priority.

Topics

7.8.1 Supported Audio Codecs

The following table summarizes the supported audio codecs on IP phones:

Codec	Algorithm	Reference	Bit Rate	Sample Rate	Packetization Time
G722	G722	RFC 3551	64 Kbps	16 Ksps	20ms

PCMA	PCMA G.711 a-law	RFC 3551	64 Kbps	16 Ksps	20ms
PCMU	G.711 u-law	RFC 3551	64 Kbps	16 Ksps	20ms
G729	G729	RFC 3551	8 Kbps	16 Ksps	20ms
iLBC_15_2kbps	iLBC	RFC 3952	15.2 Kbps	8 Ksps	20ms
iLBC_13_33kbps	iLBC	RFC 3952	13.33 Kbps	8 Ksps	30ms
opus	opus	RFC 6716	8-12 Kbps 28-40 Kbps	8 Ksps 16 Ksps	20ms

The Opus codec supports various audio bandwidths, defined as follows:

Abbreviation	Audio Bandwidth	Sample Rate (Effective)
NB (narrowband)	4 kHz	8 kHz
WB (wideband)	8 kHz	16 kHz

The following table lists the audio codecs supported by each phone model:

Phone Model	Supported Audio Codecs	Default Audio Codecs
Halo series	pcmu;pcma;g729AB;g722;iLBC;opus	pcmu;pcma;g729AB;g722;iLBC

7.8.2 Audio Codecs Configuration

The following table lists the parameters you can use to configure the audio codecs.

Parameter	**SIPPreferredVocoderX**	**config.<mac>.xml**
Description	It configures the codec list which is supported by phone for accountX.	
Permitted Values	8:pcma 0:pcmu 9:g722 18:g729AB 98:iLbc 125：opus	
Default	0;8;18;9;98	
Web UI	Account -> Codec -> Audio Codec	
Parameter	**OpusBandwidthX**	**config.<mac>.xml**
Description	It configures OPUS bandwith for accountX.	
Permitted Values	0: Narrow Band 1: Wide Band	
Default	1	
Web UI	Account -> Codec -> OPUS Bandwidth	
Parameter	**iLBCFrameModeX**	**config.<mac>.xml**
Description	It configures iLBC frame length for accountX.	
Permitted Values	20:20 30:30	
Default	30	
Web UI	Account -> Codec -> ILBC Frame Mode	

7.9 Packetization Time (PTime)

PTime is a measurement of the duration (in milliseconds) of the audio data in each RTP packet sent to the destination, and defines how much network bandwidth is used for the RTP stream transfer. Before establishing a conversation, codec and ptime are negotiated through SIP signaling. The valid values of ptime range from 10 to 60, in increments of 10 milliseconds. The default ptime is 20ms.

Topics

7.9.1 Supported PTime of Audio Codec

The following table summarizes the valid values of ptime for each audio codec:

Codec	Packetization Time (Minimum)	Packetization Time (Maximum)
G722	10ms	40ms
PCMA	10ms	40ms
PCMU	10ms	40ms
G729	10ms	80ms
iLBC	20ms	30ms
iLBC_15_2kpbs	20ms, 40ms, 60ms	
iLBC_13_33kpbs	30ms, 60ms	
opus	10ms	20ms

7.9.2 PTime Configuration

The following table lists the parameter you can use to configure the PTime.

Parameter	**AudioPacketTimeX**	**config.<mac>.xml**
Description	It configures array of rtp packet interval (in ms) of 6 codecs (PCMU/PCMA/G729AB/G722/ILBC/OPUS) in sequence for accountX.	
Permitted Values	10 20 30 40 50 60	
Default	20;20;20;20;20;20	
Web UI	Account -> Codec -> Ptime	

7.10 Early Media

The early media refers to the media (for example, audio and video) played to the caller before a SIP call is actually established.
Current implementation supports early media through the 183 message. When the caller receives a 183 message with SDP before the call is established, a media channel is established. This channel is used to provide the early media stream for the caller.

7.11 Acoustic Clarity Technology

To optimize the audio quality of your network, Halo series phones support the acoustic clarity technology: Acoustic Echo Cancellation (AEC), Background Noise Suppression (BNS), Automatic

Gain Control (AGC), Voice Activity Detection (VAD), Comfort Noise Generation (CNG) and jitter buffer.

Topics

7.11.1 Acoustic Echo Cancellation (AEC)

Halo series phones employ advanced AEC for hands-free operation. The AEC feature can remove the echo of the local loudspeaker from the local microphone without removing the near-end speech.

7.11.2 Noise Suppression

The impact noise in the room is picked-up, including paper rustling, coffee mugs, coughing, typing, and silverware striking plates. These noises, when transmitted to remote participants, can be very distracting. It is default applicable to Halo series phones.

7.11.3 Background Noise Suppression (BNS)

Background noise suppression (BNS) is designed primarily for hands-free operation and reduces background noise to enhance communication in noisy environments.

7.11.4 Automatic Gain Control (AGC)

Automatic Gain Control (AGC) is applicable to the hands-free operation and is used to keep audio output at nearly a constant level by adjusting the gain of signals in some circumstances. This increases the effective user-phone radius and helps with the intelligibility of soft-talkers.

7.11.5 Voice Activity Detection (VAD)

VAD can avoid unnecessary coding or transmission of silence packets in VoIP applications, saving on computation and network bandwidth.

Topic

7.11.5.1 VAD Configuration

The following table lists the parameter you can use to configure VAD.

Parameter	**AudioVadX**	**config.<mac>.xml**
Description	It enables or disables audio VAD for account.	
Permitted Values	true false	
Default	false	
Web UI	Account -> Codec -> VAD	

7.11.6 Comfort Noise Generation (CNG)

Comfort Noise Generation (CNG) is used to generate background noise for voice communications during periods of silence in a conversation.

7.11.7 Jitter Buffer

Halo series phones support fixed type of jitter buffers. A fixed jitter buffer adds the fixed delay to voice packets.

7.12 DTMF

DTMF (Dual Tone Multi-frequency) tone, better known as touch tone. DTMF is the signal sent from the IP phone to the network, which is generated when pressing the IP phone's keypad during a call. Each key pressed on the IP phone generates one sinusoidal tone of two frequencies. One is generated from a high-frequency group and the other from a low-frequency group.

7.12.1 Transmitting DTMF Digit

Five methods of transmitting DTMF digits on SIP calls:

- RFC 2833 - DTMF digits are transmitted by RTP Events compliant with RFC 2833. You can configure the payload type and sending times of the end RTP Event packet. The RTP Event packet contains 4 bytes. The 4 bytes are distributed over several fields denoted as Event, End bit, R-bit, Volume and Duration. If the End bit is phone to 1, the packet contains the end of the DTMF event. You can configure the sending times of the end RTP Event packet.
- RFC 4733 – It obsoletes RFC 2833.
- INBAND - DTMF digits are transmitted in the voice band. It uses the same codec as your voice and is audible to conversation partners.
- SIP INFO - DTMF digits are transmitted by SIP INFO messages. DTMF digits are transmitted by the SIP INFO messages when the voice stream is established after a successful SIP 200 OK-ACK message sequence. The SIP INFO message can transmit DTMF digits in three ways: DTMF, DTMF-Relay and Telephone-Event.
- SIP INFO + RFC 2833

Topic

Transmitting DTMF Digit Configuration

7.12.1.1 Transmitting DTMF Digit Configuration

The following table lists the parameters you can use to configure the transmitting DTMF digit.

Parameter	**SIPGroupXDtmfMode**	**config.<mac>.xml**
Description	It configures the mode to use for server GroupX when sending DTMF.	
Permitted Values	0: None 1:InBand 2:RFC2833 3:RFC4733 4:SIP_INFO 5:SIP_INFO+RFC2833	
Default	2	
Web UI	Account -> Advanced -> DTMF Mode	
Parameter	**AudioDtmfDuration**	**config.<mac>.xml**
Description	It configures Configure the DTMF duration.	

Permitted Values	0:FollowKey 1:80ms 2:100ms 3:200ms 4:250ms	
Default	0	
Parameter	**AudioDtmfFeedbackEnable**	**config.<mac>.xml**
Description	It enables or disables DTMF feedback.	
Permitted Values	true false	
Default	true	
Web UI	Setting ->Audio -> Enable DTMF Feedback	
Parameter	**AudioDtmfDuration**	**config.<mac>.xml**
Description	It configures Configure the DTMF duration.	
Permitted Values	0:FollowKey 1:80ms 2:100ms 3:200ms 4:250ms	
Default	0	
Parameter	**AudioDtmfLevel**	**config.<mac>.xml**
Description	It configures bias value of DTMF tone level.	
Permitted Values	[-6,6]	
Default	0	
Web UI	Setting ->Audio -> DTMF Level	

7.13 Suppress DTMF Display

Suppress DTMF display allows IP phones to suppress the display of DTMF digits during an active call. DTMF digits are displayed as “*” on the phone screen. Suppress DTMF display delay defines whether to display the DTMF digits for a short period of time before displaying as “*”. The following table lists the parameters you can use to configure the suppress DTMF display.

Parameter	**DtmfMask**	**config.<mac>.xml**
Description	It enables or disables the IP phone to suppress the display of DTMF digits during an active call.	
Permitted Values	false true	
Default	false	
Parameter	**DtmfHideDelay**	**config.<mac>.xml**
Description	The dtmf number will be hidden after a few seconds.	
Permitted Values	NUMERIC[0,5]	
Default	1	

8. Multi SIP Account

This chapter introduces how to configure the account Settings and register to sip server on Halo series phones.

Topics

8.1 Account Registration

Registering an account makes it easier for the IP phones to receive an incoming call or dial an outgoing call. Halo series phones support registering multiple accounts on a phone, each account requires an extension or phone number.

Topics

8.1.1 Supported Accounts

The number of the registered accounts must meet the following:

Phone Model	Accounts
H3P/H3G	<=3
H6	<=4
H3W	<=3
H6W	<=4

8.1.2 SIP Accounts Registration Configuration

In Halo R120 release, the parameter of GroupXAccountEnable for this feature has been added.

- If this parameter is true, it will enable SIP account, and try to register this account with mandatory parameters are configured.
- If this parameter is false, it will not try to register to SIP server. If the previous status was registered, it would try to de-register this SIP account when this parameter is set to false.

The following table lists the parameters you can use to register SIP accounts:

Parameter	**SIPGroupXEnable** **H3P/H3G/H3W: (X=1-3)** **H6/H6W: (X=1-4)**	**config.<MAC>.xml**
Description	It enables or disables the user to use a specific account.	
Permitted Values	0-Disabled, the account is not available for the user. 1-Enabled	
Default	1	
Phone UI	Advanced setting->Account	
Web UI	Account->Basic	
Parameter	**SIPGroupXLabelName**	**config.<MAC>.xml**
Description	It configures the label to be displayed on the phone screen.	

Permitted Values	String within 64 characters	
Default	Blank	
Web UI	Account->Basic->SIP Label Name	
Parameter	**SIPGroupXDisplayName**	**config.<MAC>.xml**
Description	It configures the display name.	
Permitted Values	String within 64 characters	
Default	Blank	
Web UI	Account->Basic->Display Name	
Phone UI	Menu->Advanced Setting->Account->AccountX->Display name	
Parameter	**SIPGroupXAuthenticationName**	**config.<MAC>.xml**
Description	It configures the register name for register authentication.	
Permitted Values	String within 64 characters	
Default	Blank	
Web UI	Account->Basic->Register Name	
Phone UI	Menu->Advanced Setting->Account->AccountX->Register name	
Parameter	**SIPGroupXAuthenticationPassword**	**config.<MAC>.xml**
Description	It configures the register password for register authentication.	
Permitted Values	String within 64 characters	
Default	Blank	
Web UI	Account->Basic->Password	
Phone UI	Menu->Advanced Setting->Account->AccountX->Password	
Parameter	**SIPGroupXDeviceUri**	**config.<MAC>.xml**
Description	It configures the register user name	
Permitted Values	String within 64 characters	
Default	Blank	
Web UI	Account->Basic->User Name	
Phone UI	Menu->Advanced Setting->Account->AccountX->User name	
Parameter	**SIPServerXAddress**	**config.<MAC>.xml**
Description	It configures the IP address or domain name of the SIP server in which the accountX is registered.	
Permitted Values	String within 256 characters	
Default	Blank	
Web UI	Account->Basic->Sip Server	

Phone UI	Menu->Advanced Setting->Account->AccountX->Sip server1	
Parameter	**SIPServerXPort**	**config.<MAC>.xml**
Description	It configures the port of SIP server in which the accountX use to register .	
Permitted Values	Integer from 0 to 65535	
Default	5060	
Web UI	Account->Basic->SIP Server Port	
Parameter	**SIPGroupXOutBoundProxyAddress**	**config.<MAC>.xml**
Description	It configures the IP address or domain name of the outbound proxy server for accountX.	
Permitted Values	String within 256 characters	
Default	Blank	
Web UI	Account->Basic->OutBound Proxy Address	
Phone UI	Menu->Advanced Setting->Account->AccountX->Outbound proxy1	
Parameter	**SIPGroupXOutBoundProxyPort**	**config.<MAC>.xml**
Description	It configures the port of the outbound proxy server for accountX.	
Permitted Values	Integer from 0 to 65535	
Default	5060	
Web UI	Account->Basic->OutBound Proxy Port	
Parameter	**SIPServerXRegisterExpire**	**config.<MAC>.xml**
Description	It configures the registration expiration time (in seconds) of SIP server for accountX.	
Permitted Values	Integer from 60 to *	
Default	3600	
Web UI	Account->Basic->Register Expire Time	

8.1.3 Registration Settings Configuration

The following table lists the parameters you can use to change the registration Settings:

Parameter	**SipUserPhoneEnableX**	**config.<MAC>.xml**
Description	It enables or disables the IP phone to add “user=phone” to the SIP header of the INVITE message.	
Permitted Values	false-Disabled true-Enabled	
Default	false	
Web UI	Account->Advance ->Send User=Phone	
Parameter	**SIPUserAgentEnabled**	**config.<MAC>.xml**
Description	It enables or disables the IP phone to add "phone mode, version, MAC" to the SIP header of sip request message. **Note**: This is a global parameter and does not distinguish between accounts.	

Permitted Values	false-Disabled true-Enabled	
Default	true	
Parameter	**SIPGroupXServerType**	**config.<MAC>.xml**
Description	It configures the type of the SIP server.	
Permitted Values	0-Default 1-OXE 2-OXO 6-Broadsoft 10-Metaswitch	
Default	0	
Web UI	Account->Advanced->Server Type	

8.2 Server Redundancy

Server redundancy is often required in VoIP deployments to ensure continuity of phone service, for example, take the call server offline for maintenance, the server fails, or the connection between the IP phone and the server fails.
Two types of redundancy are possible. In some cases, a combination of the two may be deployed:

- **Failover**: In this mode, the full phone system functionality is preserved by having a second equivalent capability call server take over from the one that has gone down/off-line. After the IP phone fails to register to the primary server, it will send the register message to secondary server.
- **Fallback**: Compared with failover mode, fallback mode supports the policy about primary server first, that means IP phone always attempts to register to the primary server, it will return to the primary server once primary server is available.

Topics

8.2.1 Registration Method Of Failover/Fallback With Outbound Proxy

Currently there is a binding relationship between sip server and outbound proxy address. That means if you configure outbound proxy address1, IP phone always sends sip request message with server1 parameter to outbound proxy address1, when the outbound proxy address1 is not available, phone will send sip request message with server2 parameter to outbound proxy address2.

8.2.2 Failover/Fallback Mode Configuration

The following table lists the parameters you can use to configure failover/fallback server redundancy

Parameter	**SIPFailOverEnable**	**config.<MAC>.xml**
Description	It configures the failover or fallback mode	
Permitted Values	True-Failover false-Fallback **Note**: This is a global parameter and does not distinguish between accounts.	
Default	true	

Web UI	SIP Features->General->Account Server Failover Enable	
Parameter	**SIPServerXFailoverAddress**	**config.<MAC>.xml**
Description	It configures the IP address or domain name of the secondary server in which the accountX is registered.	
Permitted Values	String within 256 characters	
Default	Blank	
Web UI	Account->Basic->Secondary SIP Server	
Phone UI	Menu->Advanced Settings->Account->AccountX->SIP Server2	
Parameter	**SIPServerXFailoverPort**	**config.<MAC>.xml**
Description	It configures the port of secondary server in which the accountX use to register .	
Permitted Values	Integer from 0 to 65535	
Default	5060	
Web UI	Account->Basic->Secondary SIP Port	
Parameter	**SIPServerXFailoverRegisterExpire**	**config.<MAC>.xml**
Description	It configures the registration expiration time (in seconds) of secondary server for accountX.	
Permitted Values	Integer from 60 to *	
Default	3600	
Web UI	Account->Basic-> Secondary Register Expire Time	
Parameter	**SIPGroupXFailoverOutBoundProxyAddress**	**config.<MAC>.xml**
Description	It configures the IP address or domain name of the secondary outbound proxy server for accountX.	
Permitted Values	String within 256 characters	
Default	Blank	
Web UI	Account->Basic->Secondary Outbound Proxy Address	
Phone UI	Menu->Advanced Settings->Account->AccountX->Outbound Proxy2	
Parameter	**SIPGroupXFailoverOutBoundProxyPort**	**config.<MAC>.xml**
Description	It configures the IP address or domain name of the secondary outbound proxy server for accountX.	
Permitted Values	Integer from 0 to 65535	
Default	5060	
Web UI	Account->Basic->Secondary Outbound Proxy Port	

8.3 SIP Server Name Resolution

If a domain name is configured for a server, the IP address associated with that domain name will be resolved through DNS as specified by RFC 3263. The DNS query involves NAPTR, SRV and A queries, which allows the IP phone to adapt to various deployment environments. The IP phone

performs NAPTR query for the NAPTR pointer and transport protocol (UDP, TCP and TLS), the SRV query on the record returned from the NAPTR for the target domain name and the port number, and the A query for the IP addresses.

If an explicit port (except 0) is specified, A query will be performed only. If a server port is phone to 0 and the transport type is phone to DNS-NAPTR, NAPTR and SRV queries will be tried before falling to A query. If no port is found through the DNS query, 5060 will be used.

Topics

SIP Server Name Resolution Configuration

8.3.1 SIP Server Name Resolution Configuration

The following table lists the parameters you can use to configure SIP server name resolution.

Parameter	SIPGroupXTransportMode	config.<MAC>.xml
Description	It configures the type of transport protocol.	
Permitted Values	0-Udp 1-Tcp 2-TLS 3-NAPTR. If no server port is given, the IP phone performs the DNS NAPTR and SRV queries for the service type and port.	
Default	0	
Web UI	Account->Basic->Transport Mode	

9. Call Log

In Halo R120 release, call log display is optimized (enable/disable, display on types: All/Missed/Placed Calls/Received Calls/Forwarded Calls)

All call logs are divided into All Calls/Missed Calls/Placed Calls/Received Calls/Forwarded Calls.

The five types of call log are displayed by five tabs in screen history, users can switch the tabs by push left/right button.

Topics

Call Log Display
Call Log Configuration

9.1 Call Log Display

You can access the call history information via phone user interface by the **history** button on homepage.

9.2 Call Log Configuration

The following table lists the parameters you can use to change the call log Settings:

Parameter	CallHistorySave	config.<MAC>.xml
Description	It enables or disables the IP phone to save the call log.(missed calls, placed calls, received calls)	
Permitted Values	0-Not save 1-Save all	
Default	1	

10. Call Features

This chapter shows you how to configure call features on Halo series phones:

Topics

10.1 Dial Plan

Dial plan is a string of characters that governs the way how IP phones process the inputs received from the IP phone's keypads. You can use the regular expression to define the dial plan.

Topics

10.1.1 Dial Plan Defined by Dialing Rule

Halo series phones support user-defined dialing rules, the parameters you can configure such as Country code, Area code, External Prefix and so on. They defined what the number would eventually dial out.

Topic

10.1.1.1 Dialing Rule Configuration

The following table lists the parameters you can use to configure dial rule.

Parameter	**ServerXDialingRuleCountryCode**	**config.<MAC>.xml**
Description	It configures the country code for accountX	
Permitted Values	ISO 3166 country code (Alpha-2)	
Default	Blank	
Web UI	Setting->Dialing Rule->Country Code	
Parameter	**ServerXDialingRuleAreaCode**	**config.<MAC>.xml**
Description	It configures the area code for accountX	
Permitted Values	String within 16 characters	
Default	Blank	
Web UI	Setting->Dialing Rule->Area Code	
Parameter	**ServerXDialingRuleExternalPrefix**	**config.<MAC>.xml**
Description	It configures the external prefix for accountX	
Permitted Values	String within 16 characters	
Default	Blank	
Web UI	Setting->Dialing Rule->External Prefix	
Parameter	**ServerXDialingRuleMinNumberLength**	**config.<MAC>.xml**
Description	It configures the min length of number for accountx	
Permitted Values	Integer from 0 to 120	
Default	Blank	
Web UI	Setting->Dialing Rule->Min Number Len	
Parameter	**ServerXDialingRuleExternalPrefixExceptions**	**config.<MAC>.xml**
Description	It configures list of exceptions when adding the external prefix	
Permitted Values	String within 64 characters	

Default	Blank	
Web UI	Setting->Dialing Rule->External Prefix Exception	
Parameter	**DialingRuleEnableHistoryX**	**config.<MAC>.xml**
Description	It enables or disables dialing rule works in history **Note**: It includes: 1. Dial from History tab 2. Select a number in dialing screen by right key, which is in provided by Calllog. 3. Select a number in dialing screen by left key, which is provided by Calllog , then choose “Call” or “Forward” key. 4. Dial by press redial key	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	Setting->Dialing Rule->Dialing Rule Enabled In History->Enable/Disable	
Parameter	**DialingRuleEnableContactX**	**config.<MAC>.xml**
Description	It enables or disables dialing rule works in contact **Note**: It includes 1. Dial from contacts tab 2. Select a number in dialing screen by right key, which is in provided by contact. 3. Select a number in dialing screen by left key, which is provided by contact , then choose “Call” or “Forward” key.	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	Setting->Dialing Rule->Dialing Rule Enabled In Contact->Enable/Disable	
Parameter	**DialingRuleEnableForwardX**	**config.<MAC>.xml**
Description	It enables or disables dialing rule works in fordward **Note**: Input number manually in forward Setting screen	
Permitted Values	true-enable false-disable	
Default	true	
Web UI	Setting->Dialing Rule->Dialing Rule Enabled In Farward->Enable/Disable	
Parameter	**DialingRuleEnableManualX**	**config.<MAC>.xml**
Description	It enables or disables dialing rule works in manual **Note**: It includes Input number directly / off-hook then dialing / handsfree then dialing	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	Setting->Dialing Rule->Dialing Rule Enabled In Manual->Enable/Disable	

10.1.2 Dial Plan Defined by Digit Map

Digit maps, described in RFC 3435, are defined by a single string or a list of strings. If a number entered matches any string of a digit map, the call is automatically placed. If a number entered matches no string - an impossible match -you can specify the phone’s behavior. You can specify the digit map timeout, the period of time before the entered number is dialed out.

You need to know the following basic regular expression syntax when creating a new dial plan:

X	The “x” can be used as a placeholder for any digit from 0 to 9. Example: “10x” would match “101”, “102”, “103”, and so on.
[]	The square bracket "[]" can be used as a placeholder for a single character which matches any of a phone of characters. Example: "10[2-4]1234" would match “1021234”, “1031234”, “1041234”.
-	The dash “-“ can be used to match a range of digits within the brackets. Example: “[12-4]” would match the number “1”, “2”, “3” or “4”. Note: The digits must be concrete, for example, [1-x] is invalid.
*	The star "*" can be used to match a dot "." Example: 192*168*100*[1-3] would match "192.168.100.1", "192.168.100.2", "192.168.100.3"

Topic
Digit Map Configuration

10.1.2.1 Digit Map Configuration

The following table lists the parameters you can use to configure dial rule.

Parameter	**SIPServerXDigitMap**	**config.<MAC>.xml**
Description	It configures the digit map pattern used for the dial plan for accountX	
Permitted Values	String within 2048 characters	
Default	Blank	
Web UI	Account->Advanced->Digit Map Timer	
Parameter	**DigitMapTimerX**	**config.<MAC>.xml**
Description	It configures the time (in seconds) for the IP phone to wait before dialing an entered number if it matches part of any string of the digit map.	
Permitted Values	Integer from 1 to *	
Default	1	
Web UI	Account->Advanced->Digit Map Timer	

10.2 Hotline

Hotline, sometimes referred to as hot dialing, is a point-to-point communication link in which a call is automatically directed to the preset hotline number. If you lift the handset, press the loudspeaker key or the account key, and do nothing for a specified time interval, the IP phone will automatically dial out the hotline number that you configured.

Note: Hotline doesn’t discriminate the accounts and only one hotline number you can configure.

Topics
Hotline Configuration

10.2.1 Hotline configuration

The following table lists the parameters you can use to configure hotline.

Parameter	**HotlineNumber**	**config.<MAC>.xml**
Description	It configures the hotline number that the IP phone automatically dials out when you lift the handset, press the loudspeaker key or the account key.	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features->Hotline->Hotline Number	
Phone UI	Menu->Features->Hotline->Number	
Parameter	**HotlineEnabled**	**config.<MAC>.xml**
Description	It enables or disables the phone to use hotline feature	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	Features ->Hotline->Hotline(Enable/Disable)	
Phone UI	Menu->Features->Hotline->Enable/Disable	
Parameter	**HotlineDelayTimeout**	**config.<MAC>.xml**
Description	It configures the waiting time (in seconds) for the IP phone to automatically dial out the preset hotline number. **Note**: If phone to 0, IP phone will dial out the configured hotline number immediately when you lift the handset, press the loudspeaker key or press the account key	
Permitted Values	Integer from 0 to 10	
Default	0	
Web UI	Features ->Hotline->Delay Time	
Phone UI	Menu->Features->Hotline->Delay	

10.3 Recall

Recall, also known as last call return, allows you to dial the last received call. Recall is implemented on IP phones using a programming key.

Topic
Recall Configuration

10.3.1 Recall Configuration

The following table lists the parameters you can use the recall configuration:

Program key Configuration	PhoneProgKeyXType=17 PhoneProgKeyXLabel=Recall
Web UI	Program Keys ->Program Keys->Type, Label
Phone UI	Programming key(Long press)->Key Type, Label

After the correct configuration, a recall key is available on the phone.

When you press the recall key, phone will dial out the number that last call you.

10.4 Speed Dial

Speed dial allows you to speed up dialing the contacts on the phone's idle screen using dedicated program keys.

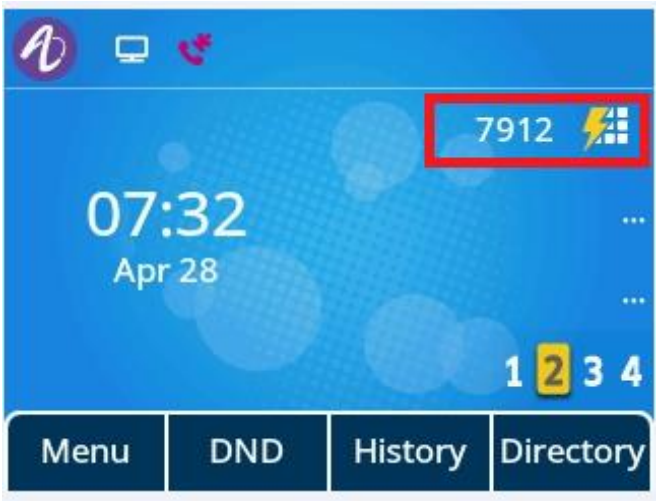
Topic
Speed Dial Configuration

10.4.1 Speed Dial Configuration

The following example shows configuration for a Speed Dial key:

Program key Configuration	PhoneProgKeyXType=1 PhoneProgKeyXAccount=1 PhoneProgKeyXLabel=Peter PhoneProgKeyXNumber=101
Web UI	Program Keys ->Program Keys->Type, Account, Value, Label
Phone UI	Programming key(Long press)->Key Type, Account, Label, Value

After the correct configuration, a Speed Dial key is available on the phone.



You can configure multiple Speed Dial keys for different contacts which are used frequently or hard to remember.

10.5 Call Timeout

Call timeout defines a specific period of time after which the IP phone will cancel the dialing if the call is not answered.

Topic
Call Timeout Configuration

10.5.1 Call Timeout Configuration

The following table lists the parameter you can use to configure call timeout.

Parameter	HearRingBackToneTimeout	config.<MAC>.xml
Description	It configures the duration time (in seconds) in the ringback state. If you configure it to 60s, the phone will cancel the dialing if the call is not answered after 60 seconds.	
Permitted Values	Integer from 0 to 120	
Default	60	

10.6 Auto Dial Out Timer

It configures the timer when the phone sends out the number after input the last digit.

Topic
Auto Dial Out Timer Configuration

10.6.1 Auto Dial Out Timer Configuration

The following table lists the parameter you can use to configure the auto dial out timer.

Parameter	CallIdleTimeout	config.<MAC>.xml
Description	It configures the timer when the phone sends out the number after input the last digit.	

Permitted Values	Integer
Default	5s
Web UI	Setting ->General -> Auto Dial Out Timer

10.7 Anonymous Call

Anonymous call allows the caller to conceal the identity information shown to callee. The callee's phone LCD screen prompts an incoming call from anonymity, there is no name, number or other information displayed.

Anonymous calls can be performed locally or on the server. When performing anonymous call on local, the IP phone sends an INVITE request message with a call source "From: Anonymous <sip:anonymous@anonymous.invalid>; tag=878106cc5e". If performing Anonymous call on a specific server, you may need to configure anonymous call on code and off code to activate and deactivate the function of anonymous call on server-side.

Topic

Anonymous Call Configuration

10.7.1 Anonymous Call Configuration

The following table lists the parameters you can use to configure anonymous call.

Parameter	**TelephonyHideIdentityX**	**config.<MAC>.xml**
Description	It enables or disable the anonymous feature for accountX	
Permitted Values	true-enable, the IP phone will block its identity from showing to the callee when placing a call. The callee's phone screen presents "Anonymous" instead of the caller's identity. false-disable	
Default	false	
Web UI	Account->Advanced->Anonymous Call	
Phone UI	Menu->Features->Anonymous->AccountX->Anonymous(Enable/Disable)	
Parameter	**TelephonyHideIdentityOnCodeX**	**config.<MAC>.xml**
Description	It configures the on code for accountX to activate anonymous call feature on server-side. **Note**: The parameter of TelephonyHideIdentityX must phone to true, phone will send the on code to server.	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Account->Advanced->Anonymous Call on code	
Phone UI	Menu->Features->Anonymous->AccountX->On code	
Parameter	**TelephonyHideIdentityOffCodeX**	**config.<MAC>.xml**

Description	It configures the off code for accountX to deactivate anonymous call feature on server-side. **Note**: The parameter of TelephonyHideIdentityX must phone to false, phone will send the off code to server.
Permitted Values	String within 32 characters
Default	Blank
Web UI	Account->Advanced->Anonymous Call off code
Phone UI	Menu->Features->Anonymous->AccountX->Off code

10.8 Anonymous Call Rejection

Anonymous call rejection allows IP phone to automatically reject incoming calls from callers whose identity has been deliberately concealed.
Anonymous call rejection can be performed locally or on the server. If performing Anonymous call rejection on a specific server, you may need to configure anonymous call rejection on code and off code to activate and deactivate server-side anonymous call rejection feature.

Topics

10.8.1 Anonymous Call Rejection Configuration

The following table lists the parameters you can use to configure anonymous call rejection.

Parameter	**AnonymousCallRejectionX** **Halo: X=1~8**	**config.<mac>.xml**
Description	It triggers the anonymous call rejection feature to on or off.	
Permitted Values	0-Off 1-On, the IP phone will automatically reject incoming calls from users enabled anonymous call feature.	
Default	0	
Web UI	Account->Advanced-> Anonymous Rejection	
Phone UI	Menu->Features->Anonymous Reject->Account X	
Parameter	**AnonymousCallRejectionOnCodeX** **Halo: X=1~8**	**config.<mac>.xml**
Description	It configures the anonymous call rejection on code. The IP phone will send the code to activate anonymous call rejection feature on server-side when you activate it on the IP phone. Example: AnonymousCallRejectionOnCode1 = *77	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Account->Advanced-> Anonymous Rejection On Code	
Phone UI	Menu->Features->Anonymous Reject->Account X	
Parameter	**AnonymousCallRejectionOffCodeX** **Halo: X=1~8**	**config.<mac>.xml**
Description	It configures the anonymous call rejection off code.	

	The IP phone will send the code to deactivate anonymous call rejection feature on server-side when you deactivate it on the IP phone. Example: AnonymousCallRejectionOffCode1 = *87
Permitted Values	String within 32 characters
Default	Black
Web UI	Account->Advanced-> Anonymous Rejection Off Code
Phone UI	Menu->Features->Anonymous Reject->Account X

10.9 Call Number Filter

Call number filter feature allows IP phone to filter designated characters automatically when dialing.

Topic

Call Number Filter Configuration

10.9.1 Call Number Filter Configuration

The following table lists the parameters you can use to configure call number filter.

Parameter	**CallNumFilter**	**config.<MAC>.xml**
Description	It configures the characters that the IP phone will filter when dialing. If the dialed number contains configured characters, the IP phone will automatically filter these characters when dialing. Example: CallNumberFilter = - If you dial 10-1, the IP phone will filter the character - and then dial out 101.	
Permitted Values	String within 32 characters	
Default	,-()	
Web UI	Setting->General->Call Number Filter	

10.10 IP Address Call

You can phone the phone whether to receive or place an IP call.

Topics

IP Address Call Configuration
Accept SIP Trust Server Only Configuration

10.10.1 IP Address Call Configuration

The following table lists the parameter you can use to configure IP address call.

Parameter	**SipPeerToPeerEnabled**	**config.<MAC>.xml**
Description	It enables or disables IP address call feature. **Note**: The parameter can only control the outgoing IP address call. If you don't want to answer the IP address call, you should phone the parameter of "SIPPeerFilterEnable" to true	

Permitted Values	true-enable false-disable
Default	true
Web UI	SIP Features ->General->Allow IP Call

10.10.2 Accept SIP Trust Server Only Configuration

Accept SIP trust server only enables the IP phones to only accept the SIP message from your SIP server and outbound proxy server. It can prevent the phone receiving ghost calls from random numbers. If you enable this feature, the IP phone cannot accept an IP address call.

The following table lists the parameters you can use to configure accept SIP trust server only.

Parameter	**SIPPeerFilterEnable**	**config.<MAC>.xml**
Description	It enables or disables filter the IP address call **Note**: The parameter can only control the incoming IP address call. If you want to make an outgoing IP address call, you should phone the parameter of "SipPeerToPeerEnabled" to true	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	SIP Features ->General->SIP Peer Filter	

10.11 Auto Answer

Halo series phones support answering a SIP call or an IP address call automatically. Auto answer is configurable on a per-line basis, while IP address call is not.
By default, the IP phones will not automatically answer the incoming call during a call even if auto answer is enabled; and the incoming call will not be automatically answered after you end the current call.

Topic
Auto Answer Configuration

10.11.1 Auto Answer Configuration

The following table lists the parameters you can use to configure auto answer.

Parameter	**TelephonyInterphonyStatusX**	**config.<MAC>.xml**
Description	It enables or disables auto answer a SIP call for accountX. **Note**: The IP phone cannot automatically answer the incoming call during a call even if auto answer is enabled.	
Permitted Values	true-enable false-disable	
Default	false	
Web UI	Account->Advanced->Auto Answer	
Phone UI	Menu->Features->Auto answer->AccountX->Enable/Disable	

10.12 Call Waiting

Call waiting enables you to receive another call when there is already an active call on your phone. If it is disabled, the new incoming call will be rejected automatically.
You can enable call waiting feature and phone the phone to play a warning tone to avoid missing important calls during a call.

Topics

10.12.1 Call Waiting Configuration

The following table lists the parameters you can use to configure call waiting.

Parameter	CallWaitingEnable	config.<mac>.xml
Description	It enables or disables the call waiting feature.	
Permitted Values	false true	
Default	true	
Parameter	CallWaitingToneEnable	config.<mac>.xml
Description	It enables or disables the IP phone to play the call waiting tone when the IP phone receives an incoming call during a call. **Note**: It works only if "SIPMaxCall" is phone to 2 (Enabled).	
Permitted Values	0-Disabled 1-Enabled	
Default	1	
Web UI	Features->General	

10.13 Do Not Disturb (DND)

DND feature enables the phone to reject all incoming calls automatically when you do not want to be interrupted. You can choose to implement DND locally on the phone or on the server-side. Usually, you can activate DND when the phone is idle. The phone stays in the DND state until you deactivate DND manually.

Topics

10.13.1 DND Settings Configuration

You can change the following DND Settings:

- Choose a DND mode. You can configure DND for all lines (Phone mode) or specific lines (Custom mode).
- The IP phone display a DND icon on the idle screen or account program key when the DND feature is enabled. It helps users to clearly view that DND is activated.

The following table lists the parameters you can use to configure DND Setting.

Parameter	DndModeAccount	config.<mac>.xml
Description	It configures the DND mode for the IP phone.	

Permitted Values	0-Phone, DND feature is effective for the phone system. 1-Custom, you can configure DND feature for each or all accounts.
Default	0
Web UI	Features -> DND -> DND Mode

10.13.2 DND Feature Configuration

After you choose a DND mode, you can configure DND feature for all lines or a specific line. It depends on the DND mode:

- **Phone** (default): DND feature is effective for all lines.
- **Custom**: DND feature can be configured for a specific line or multiple lines.

IP phones also support 2 mothed to activate and deactivate server-side DND feature. They may vary on different servers.

- **Prefix mode:** (default) IP phone will send on code or off code to synchronize the status of the DND between the IP phone and the server.
- **Subscribe mode:** IP phone will send subscribe message to synchronize the status of the DND between the IP phone and the server when forward states changed. IP phone don't need to configure on code or off code.

If default account need change, all DND and FWD configurations should clear manually.

10.13.3 DND in Phone Mode Configuration

The following table lists the parameters you can use to configure DND in Phone mode.

Parameter	**TelephonyDndState**	**config.<mac>.xml**
Description	It triggers the DND feature to on or off. **Note**: It works only if "DndModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Off 1-On, the IP phone will reject incoming calls on all accounts.	
Default	0	
Web UI	Features -> DND->Enable DND	
Phone UI	Menu->Features->DND	
Parameter	**TelephonyDndOnCode**	**config.<mac>.xml**
Description	It configures the DND on code to activate the server-side DND feature. The IP phone will send the DND on code to the server when you activate DND feature on the IP phone. Example: TelephonyDndOnCode = *78 **Note**: It works only if "DndModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> DND->On Code	
Phone UI	Menu->Features->DND->On Code	
Parameter	**TelephonyDndOffCode**	**config.<mac>.xml**
Description	It configures the DND off code to deactivate the server-side DND feature. The IP phone will send the DND off code to the server when you deactivate DND feature on the IP phone. Example: TelephonyDndOffCode = *79 **Note**: It works only if "DndModeAccount" is phone to 0 (Phone).	

Permitted Values	String within 32 characters
Default	Black
Web UI	Features -> DND->Off Code
Phone UI	Menu->Features->DND->Off Code

10.13.4 DND in Custom Mode Configuration

The following table lists the parameters you can use to configure DND in Custom mode.

Parameter	**TelephonyDndStateX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It triggers the DND feature to on or off. **Note**: It works only if "DndModeAccount" is phone to 1 (Custom).	
Permitted Values	0-Off 1-On, the IP phone will reject incoming calls on all accounts.	
Default	0	
Web UI	Features -> DND->Account ID->Enable DND	
Phone UI	Menu->Features->DND->Account ID->DND Status	
Parameter	**TelephonyDndOnCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the DND on code to activate the server-side DND feature. The IP phone will send the DND on code to the server when you activate DND feature on the IP phone. Example: TelephonyDndOnCode2 = *78 **Note**: It works only if "DndModeAccount" and "TelephonyDndState2" are both phone to 1(Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> DND -> Account ID -> On Code	
Phone UI	Menu->Features->DND->Account ID->On Code	
Parameter	**TelephonyDndOffCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the DND off code to deactivate the server-side DND feature. The IP phone will send the DND off code to the server when you deactivate DND feature on the IP phone. Example: TelephonyDndOffCode2 = *79 **Note**: It works only if "DndModeAccount" phone to 1(Custom) and "TelephonyDndState2" phone to 0.	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> DND-> Account ID->Off Code	

Phone UI	Menu->Features->DND-> Account ID->Off Code

10.13.5 DND Synchronization for Server-side Configuration

DND synchronization feature provides the capability to synchronize the status of the DND features between the IP phone and the server.
If the DND is activated in phone mode, the DND status changing locally will be synchronized to registered default accounts on the server.
If the DND is activated in custom mode, the DND status changing locally will be synchronized to the specific accounts on the server.
IP phone support 2 methods to synchronize the status of the DND between the IP phone and the server.

Prefix mode:
IP phone will send on code or off code to synchronize the status of the DND between the IP phone and the server.

Subscribe mode:
IP phone will send subscribe message to synchronize the status of the DND between the IP phone and the server when forward states changed.
IP phone don't need config on code or off code.

The following table lists the parameters you can use to configure DND synchronization for server-side.

Parameter	**TelephonyDndMethod**	**config.<mac>.xml**
Description	It configures the DND method for the IP phone. **Note**: It works only if "DNDModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Prefix 1-Subscribe, the IP phone send a SUBSCRIBE message with event "as-feature-event" to the server.	
Default	0	
Web UI	Features -> DND->DND method	
Parameter	**TelephonyDndMethodX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the DND method for the IP phone account X. **Note**: It works only if "DNDModeAccount" is phone to 1 (Custom).	
Permitted Values	0-Prefix 1-Subscribe, the IP phone send a SUBSCRIBE message with event "as-feature-event" to the server.	
Default	0	
Web UI	Features -> DND->DND method	

10.14 Call Forward

You can forward calls from any line on your phone to a contact. There are two ways of forwarding your calls:

- Forward calls in special situations, such as when the phone is busy or there is no answer, or forwarding all incoming calls to a contact immediately.
- Manually forward an incoming call to a number.

Topics

Call Forward Synchronization for Server-side Configuration

10.14.1 Call Forward Setting Configuration

You can change the following call forward Settings:

- Choose a call forward mode. You can configure call forward for all lines(Phone mode) or specific lines(Custom mode).
- Allow or disallow users to forward an incoming call to a telephone number.

The following table lists the parameters you can use to configure DND Setting.

Parameter	ForwardModeAccount	config.<mac>.xml
Description	It configures the FWD mode for the IP phone.	
Permitted Values	0-Phone, call forward feature is effective for the phone system. 1-Custom, you can configure call forward feature for each or all accounts.	
Default	0	
Web UI	Features -> Forward->forward Mode	

10.14.2 Call Forward Feature Configuration

After you choose a forward mode, you can configure call forward feature for all lines or a specific line. It depends on the forward mode:

- **Phone** (default): call forward feature is effective for all lines.
- **Custom**: call forward feature can be configured for a specific line or multiple lines.

IP phones also support call forward on code and off code to activate and deactivate server-side call forward feature. They may vary on different servers.
If default account need change, all DND and FWD configurations should clear manually.

10.14.3 Call forward in Phone Mode Configuration

The following table lists the parameters you can use to configure call forward in Phone mode.

Parameter	ForwardImmState	config.<mac>.xml
Description	It triggers the always forward feature to on or off on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardImmDest") immediately.	
Default	0	
Web UI	Features -> Forward->Immediate FWD->On/Off	
Phone UI	Menu->Features->Call Forward->Always Forward->Always Forward	
Parameter	ForwardImmDest	config.<mac>.xml
Description	It configures the destination number of the always forward on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->Immediate FWD Phone Number	
Phone UI	Menu->Features->Call Forward->Always Forward->Forward To	
Parameter	ForwardImmOnCode	config.<mac>.xml

Description	It configures the always forward on code to activate the server-side always forward feature. The IP phone will send the always forward on code and the pre-configured destination number (configured by the parameter "ForwardImmDest") to the server when you activate always forward feature on a phone basis. Example: Halo: ForwardImmOnCode2 = *72 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code(under Immediate FWD)	
Phone UI	Menu->Features->Call Forward->Always Forward->On Code	
Parameter	**ForwardImmOffCode**	**config.<mac>.xml**
Description	It configures the always forward off code to deactivate the server-side always forward feature. The IP phone will send the always forward off code to the server when you deactivate always forward feature on the IP phone. Example: Halo: ForwardImmOffCode2 = *73 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->Off Code(under Immediate FWD)	
Phone UI	Menu->Features->Call Forward->Always Forward->Off Code	
Parameter	**ForwardBusyState**	**config.<mac>.xml**
Description	It triggers the busy forward feature to on or off on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardBusyDest") when the callee is busy.	
Default	0	
Web UI	Features -> Forward->Busy FWD->On/Off	
Phone UI	Menu->Features->Call Forward->Busy Forward->Busy Forward	
Parameter	**ForwardBusyDest**	**config.<mac>.xml**
Description	It configures the destination number of the busy forward on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->Busy FWD Phone Number	
Phone UI	Menu->Features->Call Forward->Busy Forward->Forward To	
Parameter	**ForwardBusyOnCode**	**config.<mac>.xml**

Description	It configures the busy forward on code to activate the server-side busy forward feature. The IP phone will send the busy forward on code and the pre-configured destination number (configured by the parameter "ForwardBusyDest") to the server when you activate busy forward feature on a phone basis. Example: ForwardBusyOnCode = *90 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code(under Busy FWD)	
Phone UI	Menu->Features->Call Forward->Busy Forward->On Code	
Parameter	**ForwardBusyOffCode**	**config.<mac>.xml**
Description	It configures the busy forward off code to deactivate the server-side busy forward feature. The IP phone will send the busy forward off code to the server when you deactivate busy forward feature on the IP phone. Example: ForwardBusyOffCode = *91 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->Off Code(under Busy FWD)	
Phone UI	Menu->Features->Call Forward->Busy Forward->Off Code	
Parameter	**ForwardNoReplyState**	**config.<mac>.xml**
Description	It triggers the no answer forward feature to on or off on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardNoReplyDest") after a period of ring time.	
Default	0	
Web UI	Features -> Forward->No Reply FWD->On/Off	
Phone UI	Menu->Features->Call Forward->No reply Forward->No Reply Forward	
Parameter	**ForwardNoReplyDest**	**config.<mac>.xml**
Description	It configures the destination number of the no answer forward on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->No Reply FWD Phone Number	
Phone UI	Menu->Features->Call Forward->No Reply Forward->Forward To	
Parameter	**ForwardNoReplyOnCode**	**config.<mac>.xml**

Description	It configures the no answer forward on code to activate the server-side no answer forward feature. The IP phone will send the no answer forward on code and the pre-configured destination number (configured by the parameter "ForwardNoReplyDest") to the server when you activate no answer forward feature on a phone basis. Example: ForwardNoReplyOnCode = *52 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code(under No Reply FWD)	
Phone UI	Menu->Features->Call Forward->No Answer Forward->On Code	
Parameter	**ForwardNoReplyOffCode**	**config.<mac>.xml**
Description	It configures the no answer forward off code to deactivate the server-side no answer forward feature. The IP phone will send the no answer forward off code to the server when you deactivate no answer forward feature on the IP phone. Example: ForwardNoReplyOffCode = *53 **Note**: If default account is account 2 and the value of the parameter "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->Off Code(under No Reply FWD)	
Phone UI	Menu->Features->Call Forward->No Reply Forward->Off Code	
Parameter	**SIPForwardDurationNoreply**	**config.<mac>.xml**
Description	The incoming calls will be forwarded when not answered after M (M is configurable by "SIPForwardDurationNoreply") seconds.	
Permitted Values	Integer from 10 to 60	
Default	10	
Web UI	Features -> Forward -> Forward Duration Noreply(under No Reply FWD)	

10.14.4 Call Forward in Custom Mode Configuration

The following table lists the parameters you can use to configure call forward in Custom mode.

Parameter	**ForwardImmStateX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It triggers the always forward feature to on or off on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardImmDestX") immediately.	
Default	0	
Web UI	Features -> Forward->Immediate FWD->On/Off	

Phone UI	Menu->Features->Call Forward->Always Forward->account ID->Always Forward	
Parameter	**ForwardImmDestX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the destination number of the always forward on a phone basis. **Note**: It works only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->Immediate FWD Phone Number	
Phone UI	Menu->Features->Call Forward->Always Forward-> account ID->Forward To	
Parameter	**ForwardImmOnCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the always forward on code to activate the server-side always forward feature. The IP phone will send the always forward on code and the pre-configured destination number (configured by the parameter "ForwardImmDestX") to the server when you activate always forward feature on a phone basis. Example: ForwardImmOnCodeX = *72 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code(under Immediate FWD)	
Phone UI	Menu->Features->Call Forward->Always Forward->-> account ID->On Code	
Parameter	**ForwardImmOffCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the always forward off code to deactivate the server-side always forward feature. The IP phone will send the always forward off code to the server when you deactivate always forward feature on the IP phone. Example: ForwardImmOffCodeX = *73 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->Off Code(under Immediate FWD)	
Phone UI	Menu->Features->Call Forward->Always Forward-> account ID->Off Code	
Parameter	**ForwardBusyStateX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It triggers the busy forward feature to on or off on a phone basis. **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	

Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardBusyDestX") when the callee is busy.	
Default	0	
Web UI	Features -> Forward->Busy FWD->On/Off	
Phone UI	Menu->Features->Call Forward->Busy Forward-> account ID->Busy Forward	
Parameter	**ForwardBusyDestX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the destination number of the busy forward on a phone basis. **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->Busy FWD Phone Number	
Phone UI	Menu->Features->Call Forward->Busy Forward-> account ID->Forward To	
Parameter	**ForwardBusyOnCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the busy forward on code to activate the server-side busy forward feature. The IP phone will send the busy forward on code and the pre-configured destination number (configured by the parameter "ForwardBusyDestX") to the server when you activate busy forward feature on a phone basis. Example: ForwardBusyOnCodeX = *90 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code (under Busy FWD)	
Phone UI	Menu->Features->Call Forward->Busy Forward-> account ID->On Code	
Parameter	**ForwardBusyOffCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the busy forward off code to deactivate the server-side busy forward feature. The IP phone will send the busy forward off code to the server when you deactivate busy forward feature on the IP phone. Example: ForwardBusyOffCodeX = *91 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->Off Code(under Busy FWD)	
Phone UI	Menu->Features->Call Forward->Busy Forward-> account ID->Off Code	
Parameter	**ForwardNoReplyStateX**	**config.<mac>.xml**

	H3P/H3G: X=1~3 **H6: X=1~4**	
Description	It triggers the no answer forward feature to on or off on a phone basis. **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	0-Off 1-On, incoming calls are forwarded to the destination number (configured by the parameter "ForwardNoReplyDestX") after a period of ring time.	
Default	0	
Web UI	Features -> Forward->No Reply FWD->On/Off	
Phone UI	Menu->Features->Call Forward->No reply Forward-> account ID->No Reply Forward	
Parameter	**ForwardNoReplyDestX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the destination number of the no answer forward on a phone basis. **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Blank	
Web UI	Features -> Forward->No Reply FWD Phone Number	
Phone UI	Menu->Features->Call Forward->No Reply Forward-> account ID->Forward To	
Parameter	**ForwardNoReplyOnCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the no answer forward on code to activate the server-side no answer forward feature. The IP phone will send the no answer forward on code and the pre-configured destination number (configured by the parameter "ForwardNoReplyDestX") to the server when you activate no answer forward feature on a phone basis. Example: ForwardNoReplyOnCodeX = *52 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	
Default	Black	
Web UI	Features -> Forward->On Code(under No Reply FWD)	
Phone UI	Menu->Features->Call Forward->No Answer Forward-> account ID->On Code	
Parameter	**ForwardNoReplyOffCodeX** **H3P/H3G: X=1~3** **H6: X=1~4**	**config.<mac>.xml**
Description	It configures the no answer forward off code to deactivate the server-side no answer forward feature. The IP phone will send the no answer forward off code to the server when you deactivate no answer forward feature on the IP phone. Example: ForwardNoReplyOffCodeX = *53 **Note**: It work only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	String within 32 characters	

Default	Black
Web UI	Features -> Forward->Off Code(under No Reply FWD)
Phone UI	Menu->Features->Call Forward->No Reply Forward-> account ID->Off Code

10.14.5 Call Forward Synchronization for Server-side Configuration

Call forward synchronization feature provides the capability to synchronize the status of the call forward features between the IP phone and the server.
If the call forward is activated in phone mode, the forward status changing locally will be synchronized to registered default accounts on the server.
If the call forward is activated in custom mode, the forward status changing locally will be synchronized to the specific accounts on the server.But if the forward status of the specific account is changed on the server, the forward status locally will be changed.
IP phone support 2 methods to synchronize the status of the call forward between the IP phone and the server.
Prefix mode:
IP phone will send on code or off code to synchronize the status of the call forward between the IP phone and the server.
Subscribe mode:
IP phone will send subscribe message to synchronize the status of the call forward between the IP phone and the server when forward states changed.
IP phone don't need config on code or off code.

The following table lists the parameters you can use to configure call forward synchronization for server-side.

Parameter	**TelephonyFwdMethod**	**config.<mac>.xml**
Description	It configures the FWD method for the IP phone. **Note**: It works only if "ForwardModeAccount" is phone to 0 (Phone).	
Permitted Values	0-Prefix 1-Subscribe, the IP phone send a SUBSCRIBE message with event "as-feature-event" to the server.	
Default	0	
Web UI	Features -> Forward->Forward method	
Parameter	**TelephonyFwdMethodX**	**config.<mac>.xml**
Description	It configures the FWD method for the IP phone account X. **Note**: It works only if "ForwardModeAccount" is phone to 1 (Custom).	
Permitted Values	0-Prefix 1-Subscribe, the IP phone send a SUBSCRIBE message with event "as-feature-event" to the server.	
Default	0	
Web UI	Features -> Forward->Forward method	

10.15 Multiple Call Appearances

You can enable each registered line to support multiple concurrent calls. For example, you can place one call on hold, switch to another call on the same registered line, and have both calls displayed.
You can phone the maximum number of concurrent calls per line key on all-lines basis or a per-line basis. For example, if you specify 3 concurrent-calls for account 1, you can only have three call appearances on a corresponding line key. The additional incoming calls will be rejected.

Topic
Multiple Call Appearances Configuration

You can specify the maximum concurrent-call numbers per line key.

10.15.1 Multiple Call Appearances Configuration

The following table lists the parameters you can use to configure multiple call appearances.

Parameter	SIPMaxCall	config.<mac>.xml
Description	It configures the maximum number of concurrent calls for all registered lines.	
Permitted Values	NUMERIC[1,4]	
Default	2	
Web UI	SIP Features ->general	

10.16 Call Hold

Call hold provides a service of placing an active call on hold. It enables you to pause activity on an active call so that you can use the phone for another task, for example, to place or receive another call.
When a call is placed on hold, the IP phones send an INVITE request with HOLD SDP to request remote parties to stop sending media and to inform them that they are being held. IP phones support two call hold methods, one is RFC 3264, which phones the “a” (media attribute) in the SDP to sendonly, recvonly or inactive (for example, a=sendonly). The other is RFC 2543, which phones the “c” (connection addresses for the media streams) in the SDP to zero (for example, c=0.0.0.0).
When you place an active call on hold or the call is held by remote parry, a call hold tone or held tone alerts you after a specific period of time that a call is still on hold or is still held by the remote party. You can configure the call hold tone and held tone.

Topics
Call Hold Configuration
Music on Hold
How to Hold call

10.16.1 Call Hold Configuration

The following table lists the parameters you can use to configure call hold.

Parameter	RFC2543HoldEnable	config.<mac>.xml
Description	It enables or disables the IP phone to use RFC 2543 (c=0.0.0.0) outgoing hold signaling.	
Permitted Values	false, SDP media direction attributes (such as a=sendonly) per RFC 3264 is used when placing a call on hold. true, SDP media connection address c=0.0.0.0 per RFC 2543 is used when placing a call on hold.	
Default	false	
Web UI	SIP Features ->General->RFC2543 Hold Enable	
Parameter	AudioCHoldTone	config.<mac>.xml
Description	It configures the tone for the IP phone to play the initial call hold tone	
Permitted Values	LIST[NUMERIC[-60,*],8,74]	

Default	0;4;-1;200;420;335;-37;-37;-1;200;0;0;0;0;-1;200;420;335;-37;-37;-1;5000;0;0;0;0	
Parameter	**HoldUseInactiveEnable**	**config.<mac>.xml**
Description	It enables or disables the phone to use inactive outgoing hold signaling	
Permitted Values	false true	
Default	false	

10.16.2 Music on Hold

When a call is placed on hold, the IP phone will send an INVITE message to the specified MoH server account according to the SIP URI. The MoH server account automatically responds to the INVITE message and immediately plays audio from some source located anywhere (LAN, Internet) to the held party. For more information, refer to draft RFC draft Worley-service-example.

10.16.3 How to hold call

Hold call: party A is in an active call with party B, party A can Hold this call by click Menu hold. Then, party B will be held on. Party A can resume this call by click Menu Resume.

10.17 Call Mute

You can mute the microphone of the active audio device (handset, Headset or speakerphone) on Halo IP phones during an active call or when the phone is on the pre-dialing/dialing/calling/ringing screen. The call is automatically muted when setting up successfully. Muting before a call is answered prevents the other party from hearing local discussion. You can activate the mute feature by pressing the MUTE key. Normally, the mute feature is automatically deactivated when the active call ends. You can use keep mute feature to keep the mute state persisting across the calls.

Topics

Keep Mute

In a call center or meet room, if incoming calls are answered automatically, the callers may hear the local discussion. Therefore, you can mute the phone in an idle state to prevent the unintended situation. The mute state persists across calls until you unmute the microphone manually or until the phone restarts. You can activate the mute feature by pressing the MUTE key in idle/pre-dialing/dialing/ringing/calling/talking state.

10.17.1 Keep Mute Configuration

The following table lists the parameter you can use to enable or disable keep mute if incoming calls are answered automatically.

Parameter	**SIPAutoAnsweredMuteX H3P/H3G/H3W: (X=1-3) H6/H6W: (X=1-4)**	**config.<mac>.xml**
Description	It configures the keep mute feature for the IP phone.	
Permitted Values	BOOLEAN :false/true	
Default	false	
Web UI	Features->intercom-> Intercom Mute	

10.18 Call Transfer

Call transfer enables IP phones to transfer an existing call to a third party. For example, if party A is in an active call with party B, party A can transfer this call to party C (the third party). Then, party B will begin a new call with party C, and party A will disconnect.
Halo IP phones support call transfer using the REFER method specified in RFC 3515 and offer two types of transfer:

- **Blind Transfer** - Transfer a call directly to another party without consulting. Blind transfer is implemented by a simple REFER method without Replaces in the Refer-To header.
- **Attended Transfer (Consultative Transfer)** - Transfer a call with prior consulting. Attended transfer is implemented by a REFER method with Replaces in the Refer-To header.

Topics

10.18.1 Call Transfer Configuration

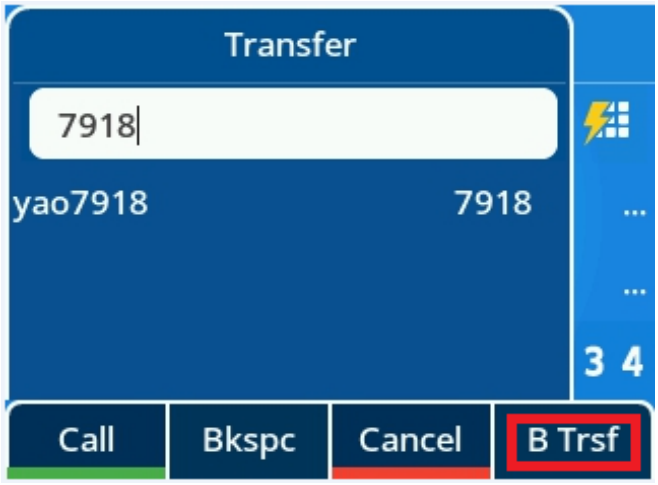
The following table lists the parameters you can use to configure call transfer.

Parameter	**TelephonyTransferAllowed**	**config.<mac>.xml**
Description	It enables or disables the transfer feature for the IP phone.	
Permitted Values	BOOLEAN :false/true	
Default	true	

Parameter	**TelephonyBlindTransferAllowed**	**config.<mac>.xml**
Description	It enables or disables the blind transfer.	
Permitted Values	BOOLEAN :false/true	
Default	true	

10.18.2 How to make Transfer call

- **Blind Transfer call** : party A is in an active call with party B, party A click Menu Transfer to input party C Number , Then party A can transfer this call to party C (the third party) by click Menu B Trsf , party B will begin a new call with party C, and party A will disconnect.



- **Consultative Transfer call** : party A is in an active call with party B, party A click Menu Transfer to input party C Number, party A will begin a new call with party C by click Menu Call , Then ,party A can transfer this call to party B (the third party) by click Menu Transfer , and party A will disconnect.

10.18.3 Transfer Mode for Dsskey Configuration

10.18.3.1 Transfer Mode for Dsskey Configuration

You can configure the transfer mode for the IP phone when transferring the current call via a specified DSS key. Halo IP phones support the transfer modes: New Call, Blind Transfer.

The following table lists the parameter you can use to configure transfer mode for Dsskey.

Parameter	**TransferKeyAsBlindTransfer**	**config.<mac>.xml**
Description	It configures the transfer mode for DSS key. When the user presses the DSS Key during a call, the DSS Key behavior depends on the transfer mode.	
Permitted Values	BOOLEAN :false/true	
Default	false	

10.19 Conference

Halo IP phones support local 5-way conference and multi-way network conference.

Topics

10.19.1 Local Conference Configuration

The local conference requires a host phone to process the audio of all parties. Halo IP phones support up to 5 parties (including yourself) in a local conference call.
You can enable or disable the local conference feature, and configure the way to phone up a local conference.
For Halo IP phones, you can merge two calls into a conference directly by tapping the Conf soft key or Conf hard key

For a local conference, if the conference initiator leaves the conference, all parties are disconnected and the conference call ends. You can enable Transfer on Conference Hang Up feature, and allows the other parties to remain connected when the conference initiator drops the conference call.

The following table lists the parameters you can use to configure local conference.

Parameter	SIPLocalConfEnable	config.<mac>.xml
Description	It enables or disables the local conference feature for the IP phone.	
Permitted Values	BOOLEAN :false/true	
Default	True	
Web UI	Features->SIP-> Local Conference Enable	

10.19.2 Network Conference Configuration

Network conference, also known as a centralized conference, provides you with the flexibility of call with multiple participants (more than three). The IP phones implement network conference using the REFER method specified in RFC 4579. This feature depends on the support from a SIP server
For network conference, if any party leaves the conference, the remaining parties are still connected.

The following table lists the parameter you can use to configure network conference.

Parameter	SIPNConfUriX H3P/H3G/H3W: (X=1-3) H6/H6W: (X=1-4)	config.<mac>.xml
Description	It configures the network conference URI for a specific account. **Note** : Network conference URI take effect only when local conference phone to false	
Permitted Values	TEXT	
Default	UNDEFINED	
Web UI	Account->Advanced-> N-conference URI	

10.20 Keep Mute

User can mute the phone in an idle state to prevent the unintended situation. The mute state keeps during the calls until user unmutes the microphone manually or until the phone restarts.

The following table lists the parameter you can use to enable or disable keep mute.

Parameter	KeepMuteEnable	config.<mac>.xml
Description	It configures the keep mute feature for the IP phone.	
Permitted Values	false true	
Default	false	

10.21 Auto Redial

You can set the phone automatically redial the last dialed number when the callee is temporarily unavailable. Both the number of attempts and waiting time between redials are configurable.

Topics

Auto Redial Configuration

10.21.1 Auto Redial Configuration

The following table lists the parameters you can use to configure auto redial.

Parameter	**AutoRedialEnable**	**config.<mac>.xml**
Description	It enables or disables the IP phone to automatically redial the last dialed number when the callee is temporarily unavailable.	
Permitted Values	false true	
Default	false	
Phone UI	Menu->Features->Auto Redial	
Web UI	Setting->General-> Auto Redial	
Parameter	**AutoRedialTimes**	**config.<mac>.xml**
Description	It configures the interval (in seconds) for the IP phone to wait between redials. The IP phone redials the last dialed number at regular intervals till the callee answers the call.	
Permitted Values	Integer from 1 to 10	
Default	5	
Phone UI	Menu->Features->Auto Redial	
Web UI	Setting->General-> Auto Redial Times(1~10)	
Parameter	**AutoRedialInterval**	**config.<mac>.xml**
Description	It configures the auto redial times when the callee is temporarily unavailable. The IP phone tries to redial the callee as many times as configured till the callee answers the call.	
Permitted Values	Integer from 1 to 60	
Default	10	
Phone UI	Menu->Features->Auto Redial	
Web UI	Setting-> General-> Auto Redial Interval(1~60s)	

10.22 USB Recording

For manual recording, you need to use the recording soft keys to record audio calls or conference.

Topics

USB Recording Configuration

10.22.1 USB Recording Configuration

The following table lists the parameter you can use to configure USB recording.

Parameter	**UsbRecordingEnable**	**config.<mac>.xml**
Description	It enables or disables the call recording (using a USB flash drive) feature for the IP phone.	

Permitted Values	false true	
Default	false	
Parameter	**AutoRecordingEnable**	**config.<mac>.xml**
Description	It enables or disables the automatic recording feature for the IP phone.	
Permitted Values	false true	
Default	false	

10.23 Confidential Dial

Password dial feature allows the callee number to be partly displayed on the IP phone when placing a call. The hidden digits are displayed as asterisks on the phone screen. The number in placed call list is also partly displayed on the IP phone. This feature is especially useful for users who often place important and confidential calls.

The following table lists the parameters you can use to configure password dial.

Parameter	**ConfidentialDialEnable**	**config.<mac>.xml**
Description	It configures to enable or disable the password dial feature.	
Permitted Values	false true	
Default	false	
Web UI	Setting->General-> Confidential Dial Enable	
Parameter	**ConfidentialDialPrefix**	**config.<mac>.xml**
Description	It configures the prefix of the number that needs to be partly displayed.	
Permitted Values	String within 32 characters	
Default	empty	
Web UI	Setting->General-> Confidential Dial Prefix	
Parameter	**ConfidentialDialLength**	**config.<mac>.xml**
Description	It configures how many digits to be displayed as asterisks.	
Permitted Values	String within 32 characters	
Default	empty	
Web UI	Setting->General-> Confidential Dial Length(0-32)	

11. Phone Customization

11.1 Multi Languages

Halo series phones support multiple languages. Languages used on the phone user interface and web user interface can be specified respectively as required.

Topics

11.1.1 Supported Languages

The following table lists available languages supported by the phone user interface and the web user interface.

Phone User Interface	Web User Interface
English	English
Français	French
Deutsch	Deutsch
Italiano	Italian
Español	Spanish
Nederlands	Nederlands
Português	Portuguese
Magyar	Hungarian
Čeština	Czech
Slovenčina	Slovak
Slovenski	Slovenian
Eesti	Estonian
Polski	Polish
Lietuvių	Lithuanian
Latvisks	Latvian
Türkçe	Turkish
Ελληνικά	Greek
Svensk	Sweden
Norsk	Norway
Dansk	Denmark
Suomi	Finland
Íslenska	Icelandic
简体中文	Chinese_simplified
繁體中文	Chinese_traditional
중국어	Korean
日本語	Japanese
العبرية	Arabic
עברית	Hebrew
Иврит	Russian

11.1.2 Phone Language Configuration

The following table lists the parameters you can use to configure phone language.

Parameter	**language**	**config.<mac>.xml**

Description	It configures phone display language.
Permitted Values	0-28
Default	0
Phone UI	Menu->Basic Setting -> language

11.2 Screen Saver

The screen saver will automatically start when the IP phone is idle for the preset waiting time. You can stop the screen saver at any time by pressing any key or touching the screen. When your phone is idle again for a preset waiting time, the screen saver starts again.
By default, the phone screen displays a built-in picture when the screen saver starts. The following shows that the built-in screen saver is displaying on Halo series IP phones.

Halo series phones:

The time & date, certain status icons (for example, Miss Call, a new text message), or custom information (for example, company logo) is also configurable to display on the screen saver.

Topics
Screensaver Configuration

11.2.1 Screensaver Configuration

The following table lists the parameters you can use to configure screensaver.

Parameter	**ScreenSaverEnabled**	**config.<mac>.xml**
Description	It configures phone to enable or disable screensaver	
Permitted Values	True/false	
Default	True	
Web UI	Setting->display-> Screensaver	
Phone UI	Menu->Basic Setting-> Display-> Screen saver-> Screen saver	
Parameter	**SipScreenSaverTimeout**	**config.<mac>.xml**
Description	It configures the time (in seconds) to wait in the idle state before the screen saver starts.	
Permitted Values	60-1min 120-2min 300-5min 600-10min 1800-30min 3600-1h 7200-2h 10800-3h	

	21600-6h
Default	True
Web UI	Setting->display-> Timeout
Phone UI	Menu->Basic Setting-> Display-> Screen saver->Wait Time

11.3 Backlight

You can change the backlight brightness of the LCD screen during phone activity and inactivity. The backlight brightness automatically changes when the phone is idle for a specified time.

You can change the screen backlight brightness and time in the following Settings:
Active Level: The brightness level of the LCD screen when the phone is active. Digits (1-10) represent different brightness levels. 10 is the brightest level.
Inactive Level: The brightness of the LCD screen when the phone is inactive. You can select a low brightness or turn off the backlight.
Backlight Time: The delay time to change the brightness of the LCD screen when the phone is inactive. Backlight time includes the following Settings you can choose from
Always On: Backlight is on permanently.

15s, 30s, 1min, 2min, 5min, 10min or 30min: Backlight is changed when the phone is inactive after the designated time (in seconds).

Topics

11.3.1 Supported Backlight Options

The following table lists available configuration options to configure the backlight of phone models/expansion modules.

Phone Model	Configuration Options
Halo series IP phones	Inactive Level Active Level Backlight Time

11.3.2 Backlight Brightness and Time Configuration

The following table lists the parameters you can use to configure screen backlight brightness and time.

Parameter	**BackLightLevel**	**config.<mac>.xml**
Description	It configures the intensity of the LCD screen when the phone is active.	
Permitted Values	NUMERIC[1,9]	
Default	5	
Web UI	Setting->Display->Active Backlight Level	
Phone UI	Menu->Basic Setting-> Display-> Backlight->Active Level	
Parameter	**InactiveBackLightLevel**	**config.<mac>.xml**
Description	It configures the intensity of the LCD screen when the phone is inactive.	

Permitted Values	NUMERIC[1,9]	
Default	1	
Web UI	Setting->Display->Inactive Backlight Level	
Phone UI	Menu->Basic Setting-> Display-> Backlight->Inactive Level	
Parameter	**BackLightTimeout**	**config.<mac>.xml**
Description	It configures the delay time (in seconds) to change the intensity of the LCD screen when the IP phone isinactive.	
Permitted Values	0-Always On 15-15s 30-30s 60-1min 120-2min 300-5min 600-10min 1800-30min	
Default	300	
Web UI	Setting->Display->Backlight Timeout	
Phone UI	Menu->Basic Setting-> Display-> Backlight-> Backlight Time	

11.4 Time and Date

Halo series phones maintain a local clock. You can choose to get the time and date from SNTP (Simple Network Time Protocol) time server to have the most accurate time and phone DST (Daylight Saving Time) to make better use of daylight and to conserve energy, or you can phone the time and date manually. The time and date can be displayed in several formats on the idle screen.

Topics

11.4.1 Time Zone

Time Zone	Time Zone Name
-11:00	Midway,Niue,Pago_Pago
-10:00	Adak,Honolulu,Rarotonga,Tahiti
-9:30	Marquesas
-9:00	Anchorage,Gambier,Juneau,Metlakatla,Nome,Sitka,Yakutat
-8:00	Dawson,Los_Angeles,Pacific-New,Pitcairn,Tijuana,Vancouver,Whitehorse
-7:00	Boise,Cambridge_Bay,Chihuahua,Creston,Dawson_Creek,Denver,Edmonton,Fort_Nelson,Hermosillo,Inuvik,Ojinaga,Mazatlan,Phoenix,Yellowknife
-6:00	Bahia_Banderas,Belize,Chicago,Costa_Rica,Easter,El_Salvador,Galapagos,Guatemala,Indiana/Knox,Indiana/Tell_City,Managua,Matamoros,Menominee,Merida,Mexico_City,Monterrey,North_Dakota/Beulah,North_Dakota/Center,North_Dakota/New_Salem,Rainy_River,Rankin_Inlet,Regina,Resolute,Swift_Current,Tegucigalpa,Winnipeg
-5:00	Atikokan,Bogota,Cancun,Cayman,Detroit,Eirunepe,Grand_Turk,Guayaquil,Havana,Indiana/Indianapolis,Indiana/Marengo,Indiana/Petersburg,Indiana/Vevay,Indian

	a/Vincennes,Indiana/Winamac,Iqaluit,Jamaica,Kentucky/Louisville,Kentucky/Monticello,Lima,Nassau,New_York,Nipigon,Panama,Pangnirtung,Port-au-Prince,Rio_Branco,Thunder_Bay,Toronto
-4:00	Anguilla,Antigua,Aruba,Asuncion,Barbados,Bermuda,Blanc-Sablon,Boa_Vista,Campo_Grande,Caracas,Cuiaba,Curacao,Dominica,Glace_Bay,Goose_Bay,Grenada,Guadeloupe,Guyana,Halifax,Kralendijk,La_Paz,Lower_Princes,Manaus,Marigot,Martinique,Moncton,Montserrat,Port_of_Spain,Porto_Velho,Puerto_Rico,Santiago,Santo_Domingo,St_Barthelemy,St_Kitts,St_Lucia,St_Thomas,St_Vincent,Thule,Tortola
-3:30	St_Johns
-3:00	Araguaina,Argentina/Buenos_Aires,Argentina/Catamarca,Argentina/Cordoba,Argentina/Jujuy,Argentina/La_Rioja,Argentina/Mendoza,Argentina/Rio_Gallegos,Argentina/Salta,Argentina/San_Juan,Argentina/San_Luis,Argentina/Tucuman,Argentina/Ushuaia,Bahia,Belem,Cayenne,Fortaleza,Godthab,Maceio,Miquelon,Montevideo,Palmer,Paramaribo,Punta_Arenas,Recife,Rothera,Santarem,Sao_Paulo,Stanley
-2:00	Noronha,South_Georgia
-1:00	Azores,Cape_Verde
0	GMT,UTC,Universal,Abidjan,Accra,Bamako,Banjul,Bissau,Canary,Conakry,Dakar,Danmarkshavn,Faroe,Freetown,Greenwich,Guernsey,Isle_of_Man,Jersey,Lisbon,Lome,London,Madeira,Monrovia,Nouakchott,Ouagadougou,Reykjavik,Sao_Tome,St_Helena,Troll,Zulu
+1:00	Algiers,Amsterdam,Andorra,Bangui,Belgrade,Berlin,Bratislava,Brazzaville,Brussels,Budapest,Busingen,Casablanca,Ceuta,Copenhagen,Douala,Dublin,El_Aaiun,Gibraltar,Kinshasa,Lagos,Libreville,Ljubljana,Longyearbyen,Luanda,Luxembourg,Madrid,Malabo,Malta,Monaco,Ndjamena,Niamey,Oslo,Paris,Podgorica,Porto-Novo,Prague,Rome,San_Marino,Sarajevo,Scoresbysund,Skopje,Stockholm,Tirane,Tunis,Vaduz,Vatican,Vienna,Warsaw,Zagreb,Zurich
+2:00	Amman,Athens,Beirut,Blantyre,Bucharest,Bujumbura,Cairo,Chisinau,Damascus,Famagusta,Gaborone,Gaza,Harare,Hebron,Helsinki,Jerusalem,Johannesburg,Kaliningrad,Khartoum,Kiev,Kigali,Lubumbashi,Lusaka,Maputo,Mariehamn,Maseru,Mbabane,Nicosia,Riga,Sofia,Tallinn,Tripoli,Uzhgorod,Vilnius,Windhoek,Zaporozhye
+3:00	Addis_Ababa,Aden,Antananarivo,Asmara,Baghdad,Bahrain,Comoro,Dar_es_Salaam,Djibouti,Istanbul,Juba,Kampala,Kirov,Kuwait,Mayotte,Minsk,Mogadishu,Moscow,Nairobi,Qatar,Riyadh,Simferopol,Syowa
+3:30	Tehran
+4:00	Astrakhan,Baku,Dubai,Mahe,Mauritius,Muscat,Reunion,Samara,Saratov,Tbilisi,Ulyanovsk,Volgograd,Yerevan
+4:30	Kabul
+5:00	Aqtau,Aqtobe,Ashgabat,Atyrau,Dushanbe,Karachi,Kerguelen,Maldives,Mawson,Oral,Qyzylorda,Samarkand,Tashkent,Yekaterinburg
+5:30	Colombo,Kolkata
+5:45	Kathmandu
+6:00	Almaty,Bishkek,Chagos,Dhaka,Omsk,Qostanay,Thimphu,Urumqi,Vostok
+6:30	Cocos,Yangon
+7:00	Bangkok,Barnaul,Christmas,Davis,Ho_Chi_Minh,Hovd,Jakarta,Krasnoyarsk,Novokuznetsk,Novosibirsk,Phnom_Penh,Pontianak,Tomsk,Vientiane
+8:00	Brunei,Casey,Choibalsan,Hong_Kong,Irkutsk,Kuala_Lumpur,Kuching,Macau,Makassar,Manila,Perth,Shanghai,Singapore,Taipei,Ulaanbaatar
+8:45	Eucla
+9:00	Chita,Dili,Jayapura,Khandyga,Palau,Pyongyang,Seoul,Tokyo,Yakutsk

+9:30	Adelaide,Broken_Hill,Darwin
+10:00	Brisbane,Chuuk,Currie,DumontDUrville,Guam,Hobart,Lindeman,Melbourne,Port_Moresby,Saipan,Sydney,Ust-Nera,Vladivostok
+10:30	Lord_Howe
+11:00	Bougainville,Efate,Guadalcanal,Kosrae,Macquarie,Magadan,Norfolk,Noumea,Pohnpei,Sakhalin,Srednekolymsk
+12:00	Anadyr,Auckland,Fiji,Funafuti,Kamchatka,Kwajalein,Majuro,McMurdo,Nauru,Tarawa,Wake,Wallis
+12:45	Chatham
+13:00	Apia,Enderbury,Fakaofo,Tongatapu
+14:00	Kiritimati

Topic
TimeZone Configuration

11.4.1.1 TimeZone Configuration

The following table lists the parameters you can use to configure the TimeZone.

Parameter	**DmAdmcfgTimeZoneUtoffphone**	**config.<mac>.xml**
Description	It configures TimeZone.	
Permitted Values	CHOICE	
Default	0	
Web UI	Setting->Time&Date	

11.4.2 NTP Settings

You can phone an NTP time server for the desired area as required. The NTP time server address can be offered by the DHCP server or configured manually.

Topic
NTP Configuration

11.4.2.1 NTP Configuration

The following table lists the parameters you can use to configure the NTP.

Parameter	**DmEnetcfgSntp**	**config.<mac>.xml**
Description	It configures the IP address or the domain name of the NTP server . The IP phone will obtain the current time and date from the NTP server	
Permitted Values	IP_DOMAIN	
Default	0.pool.ntp.org	
Web UI	Setting->Time&Date->SNTP Address	
Parameter	**DmEnetcfgSntp2**	**config.<mac>.xml**
Description	It configures the IP address or the domain name of the NTP server2 . The IP phone will obtain the current time and date from the NTP server2	
Permitted Values	IP_DOMAIN	
Default	time.nist.gov	

Web UI	Setting->Time&Date->SNTP Secondary Address	
Parameter	**DmEnetcfgSntpRefreshPeriod**	**config.<mac>.xml**
Description	It configures the interval (in seconds) at which the phone updates time and date from the NTP server.	
Permitted Values	NUMERIC[0,*]	
Default	3600	
Web UI	Setting->Time&Date->SNTP Refresh Period	

11.4.3 DST Settings

You can phone DST for the desired area as required. By default, the DST is phone to disable, if phone to Automatic, it can be adjusted automatically from the current time zone configuration. The time zone and corresponding DST pre-configurations exist in the AutoDST file. If the DST is phone to Automatic, the IP phone obtains the DST configuration from the AutoDST file.

Topic
DST Configuration

11.4.3.1 DST Configuration

The following table lists the parameters you can use to configure DST.

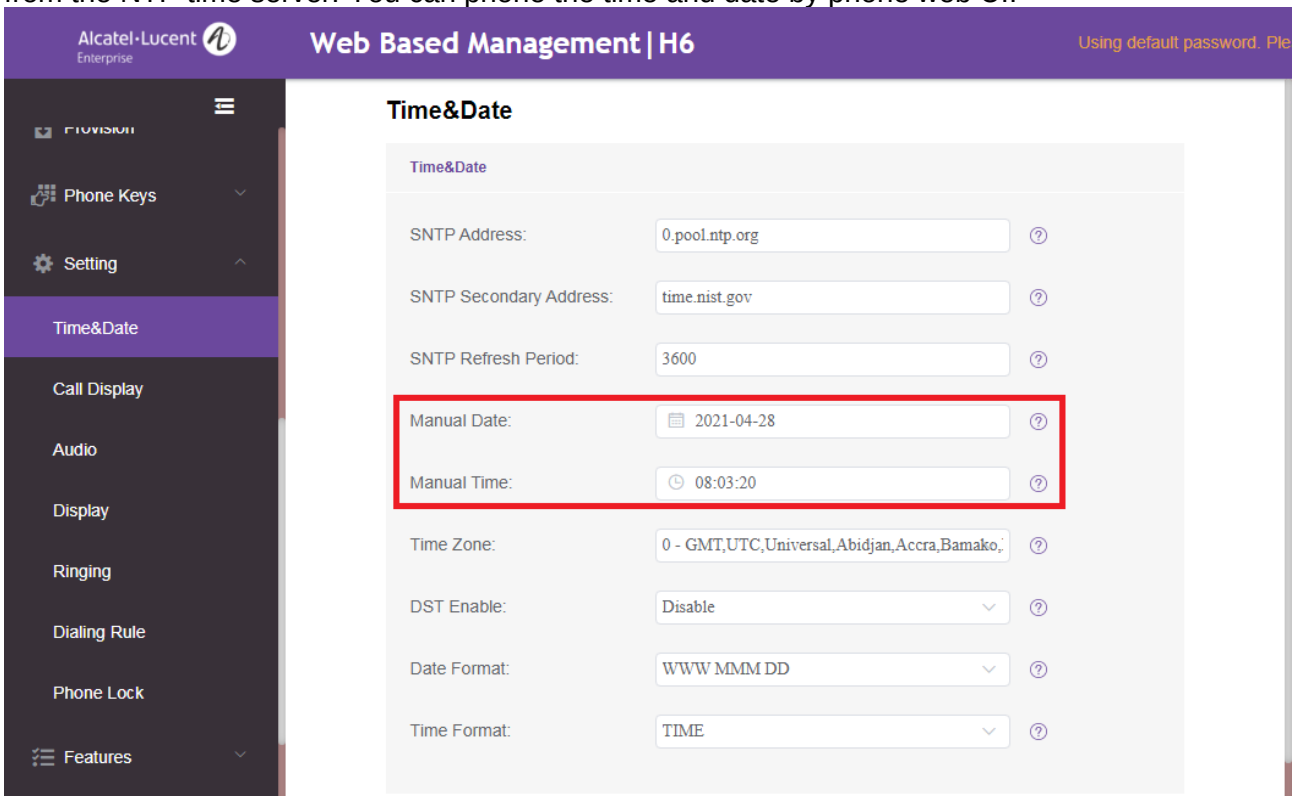
Parameter	**DmAdmcfgDstEnable**	**config.<mac>.xml**
Description	It configures Daylight Saving Time (DST) feature.	
Permitted Values	0-Disabled 1-Enabled 2-Automatic	
Default	0	
Web UI	Setting->Time&Date->DST Enable	
Parameter	**DmlAdmcfgTimeZoneLocation**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) Location. Note: It works only if “LocalAdmcfgDstEnable” is phone to 2 (Automatic).	
Permitted Values	TEXT	
Default	empty	
Web UI	Setting->Time&Date->Location	
Parameter	**DmAdmcfgDstType**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) Type **Note**: It works only if “LocalAdmcfgDstEnable” is phone to 1 (Enable).	
Permitted Values	Week/day	
Default	week	
Web UI	Setting->Time&Date->DST Type	
Parameter	**DmAdmcfgDstStartDate**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) StartDate **Note**: It works only if “LocalAdmcfgDstEnable” is phone to 1 (Enable).and LocalAdmcfgDstType is phone to date	
Permitted Values	TEXT	

Default	1	
Web UI	Setting->Time&Date->DST Start Date	
Parameter	**DmAdmcfgDstEndDate**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) EndDate **Note**: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable).and LocalAdmcfgDstType is phone to date	
Permitted Values	TEXT	
Default	30	
Web UI	Setting->Time&Date->DST End Date	
Parameter	**DmAdmcfgDstStartWeek**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) StartWeek **Note**: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable).and LocalAdmcfgDstType is phone to week	
Permitted Values	1 - First week 2 - Second week 3 - Third week 4 - Fourth week 5 - Last week	
Default	5	
Web UI	Setting->Time&Date->DST Start Date->Week	
Parameter	**DmAdmcfgDstEndWeek**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) EndWeek **Note**: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable).and LocalAdmcfgDstType is phone to week	
Permitted Values	1 - First week 2 - Second week 3 - Third week 4 - Fourth week 5 - Last week	
Default	5	
Web UI	Setting->Time&Date->DST End Date->Week	
Parameter	**DmAdmcfgDstStartHour**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) StartHour **Note**: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable).and LocalAdmcfgDstType is phone to week or day	
Permitted Values	NUMERIC[0,23]	
Default	0	
Web UI	Setting->Time&Date->DST Start Date->Hour	
Parameter	**DmAdmcfgDstEndHour**	**config.<mac>.xml**
Description	It configures the Daylight Saving Time (DST) EndHour **Note**: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable).and LocalAdmcfgDstType is phone to week or day	
Permitted Values	NUMERIC[0,23]	
Default	23	
Web UI	Setting->Time&Date->DST End Date->Hour	
Parameter	**DmAdmcfgDstOffphone**	**config.<mac>.xml**
Description	It configures the offphone time (in minutes) of Daylight Saving Time (DST).	

	Note: It works only if "LocalAdmcfgDstEnable" is phone to 1 (Enable)
Permitted Values	NUMERIC[-300,300]
Default	60
Web UI	Setting->Time&Date->Offset(min)

11.4.4 Time and Date Manually Configuration

You can configure the time and date manually when the phones cannot obtain the time and date from the NTP time server. You can phone the time and date by phone web UI.



11.4.5 Time and Date Format Configuration

You can customize the time and date by choosing between a variety of time and date formats, including options to date format with the day, month, or year, and time format in 12 hours or 24 hours, or you can also customize the date format as required.

The following table lists the parameters you can use to configure time and date format.

Parameter	**TimeFormat**	**config.<mac>.xml**
Description	It configures the time format.	
Permitted Values	0-Hour 12, the time will be displayed in 12-hour format with AM or PM specified. 1-Hour 24, the time will be displayed in 24-hour format (for example, 2:00 PM displays as 14:00).	
Default	0	
Web UI	Setting->Time&Date->Time Format	
Parameter	**DateFormat**	**config.<mac>.xml**
Description	It configures the date format.	

Permitted Values	0 - WWW MMM DD 1 - DD-MMM-YY 2 - YYYY-MM-DD 3 - DD/MM/YYYY 4 - MM/DD/YY 5 - DD MMM YYYY 6 - WWW DD MMM 7 - MM DD WWW 8 - YY-MM-DD 9 - YYYY/MM/DD 10 - YY/MM/DD 11 - YYYY MM DD
Default	0
Web UI	Setting->Time&Date->Date Format
Phone UI	Menu->Basic Setting-> Time and Date-> Date

11.5 Key As Send

Key as send allows you to assign the pound key ("#") or asterisk key ("*") as the send key.

Topic
Key As Send Configuration

11.5.1 Key As Send Configuration

The following table lists the parameters you can use to configure key as send feature.

Parameter	**KeyAsSend**	**config.<mac>.xml**
Description	It configures the "#" or "*" key as the send key.	
Permitted Values	0-Disabled, neither "#" nor "*" can be used as the send key. 1-# key, the pound key is used as the send key. 2-* key, the asterisk key is used as the send key.	
Default	1	
Web UI	Setting->general	
Phone UI	Menu->Features-> Key as Send	

11.6 Handset/Headset/Speakerphone Mode

Halo series phones support three ways to place/answer a call: using the handset, using the Headset or using the speakerphone. You can choose the frequently used audio device as required.

Topic
Handset/Headset/Speakerphone Mode Configuration

11.6.1 Handset/Headset/Speakerphone Mode Configuration

The following table lists the parameters you can use to configure handset/Headset/speakerphone mode.

Parameter	**AudioRingDevice**	**config.<mac>.xml**
Description	It configures the AudioRingDevice	
Permitted Values	0 – handsfree 1 – Headset 2 – handsfree + Headset	

Default	0
Web UI	Setting->ringing
Phone UI	Menu->Basic Setting-> Sound->Ringing->Ringing Device

11.7 DSS Keys

Halo series phones support programmable Keys in phone. You can configure different functions to DSS keys. This section explains how to configure Program keys.

Topics

11.7.1 Supported DSS Keys

The following table lists the number of DSS keys you can configure for each phone model:

Phone Model	Programmable Keys	Ext Keys
H3P	8	N/A
H3G	8	N/A
H6	12	N/A

11.7.2 Supported DssKey Types

The supported Dsskey function types are varied by programmable keys.

- Halo IP phones:

ID	DSS Key Types
0	N/A
1	SpeedDial
2	BLF List
3	Do Not Disturb
4	Directory
5	VoiceMail
6	Conference
7	Forward
8	Transfer
9	Group Listening
10	Headset
11	Hot Desking
12	Phone Lock
13	Prefix
14	DTMF

15	Direct Pickup
16	Group Pickup
17	Call Park
18	Recall
19	XML Browser
21	Intercom
22	Retrieve Park
23	AudioHub
24	Private Hold
58	Hold
59	BLF
60	Account
61	Usb Recording

11.7.3 Program Keys

You can customize programmable keys on the phone to enable users to access frequently to use functions, or, if your phone does not have a particular hard key, you can create a soft key. For example, if the phone does not have a Do Not Disturb hard key, you can create a Do Not Disturb soft key. The programmable key takes effect only when the IP phone is idle.

11.7.3.1 Programmable Keys Configuration

The following table lists the parameters you can use to configure programmable keys.

Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	It configures key feature for a specific programmable key.	
Permitted Values	Halo: 0 - Not Used;1 - Speed Dial;59 - BLF;2 - BLF List;3 - Do Not Disturb;4 - Directory; 5 - VoiceMail;6 - Conference;7 - Forward; 8 - Transfer 9 - Group Listening ;10 - Headset;11 - Hot Desking;12 - Phone Lock;13 - Prefix;14 - DTMF;15 - Direct Pickup;16 - Group Pickup 17 - Call Park: 18 - Recall: 19 - XML Browser : 21 - Intercom: 22 - Retrieve Park : 23 - AudioHub: 24 - Private Hold 58 - Hold : 60 - Account: 61 - Usb Recording	
Default	0	
Web UI	Phone Keys->Program Keys	
Phone UI	long press softkey to enter programkey configure menu	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	It configures the desired account to apply the programmable key feature.	
Permitted Values	Halo: 1 - Account 1 ;2 - Account 2 ;3 - Account 3 ;4 - Account 4 ;5 - Account 5 ; 6 - Account 6 ; 7 - Account 7 ;8 - Account 8	
Default	1	
Web UI	Phone Keys->Program Keys	
Phone UI	long press softkey to enter programkey configure menu	

Parameter	PhoneProgKeyXLabel	config.<mac>.xml
Description	It configures the label displayed on the phone screen for a specific programmable key. This is an optional configuration.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Program Keys	
Phone UI	long press softkey to enter programkey configure menu	
Parameter	PhoneProgKeyXNumber	config.<mac>.xml
Description	It configures the value for some programmable key features. For example, when you assign the Speed Dial to the programmable key, this parameter is used to specify the contact number you want to dial out. It is also used to specify the contact number with the DTMF sequence. The contact number and DTMF sequence are separated by commas. Note: You need to configure this parameter when “programablekey.X.type” is phone to 1, 59, 5, 14, 13, 15, 16,17,19,21,22 or 73.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Program Keys	
Phone UI	long press softkey to enter programkey configure menu	
Parameter	PhoneProgKeyXExtension	config.<mac>.xml
Description	For blf feature: It configures the pickup code. Note: It is only applicable when “programablekey.X.type” is phone to 59.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Program Keys	
Phone UI	long press softkey to enter programkey configure menu	

11.7.4 Phone Keys

11.7.4.1 Programmable Hard Keys Configuration

This feature provides 17 groups of new parameters for user to configure the programming hard key such as key Redial/key Hold/key conference and so on.
Users can configure these keys for custom function such as Speed dial/DND/Forward and so on.
The *** in the table will be replaced by Key Name in the actual database.

- The feature can be configured by the following parameters in configuration file:

Parameter	ProgramKey***Type	config.<mac>.xml
Description	It configures key type for a specific programmable key.	
Permitted Values	0 - Not Used 1 - Speed Dial 3 - Do Not Disturb 4 - Directory 7 - Forward	

	10 - HeadSet 11 - Hot Desking 12 - Phone Lock 13 - Prefix 18 - Recall 19 - XML Browser 21 - Intercom 23 - AudioHub 101 - Menu 102 - History 103 - Status	
Default	0	
Web UI	Phone Keys->Dynamic Softkey	
Parameter	**ProgramKey***Account**	**config.<mac>.xml**
Description	It configures the desired account to apply the programmable key feature.	
Permitted Values	Halo: 1 - Account 1 ;2 - Account 2 ;3 - Account 3 ;4 - Account 4 ;5 - Account 5 ; 6 - Account 6 ; 7 - Account 7 ;8 - Account 8	
Default	1	
Web UI	Phone Keys->Dynamic Softkey	
Parameter	**ProgramKey***Label**	**config.<mac>.xml**
Description	It configures the label displayed on the phone screen for a specific programmable key. This is an optional configuration.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Dynamic Softkey	
Parameter	**ProgramKey***Number**	**config.<mac>.xml**
Description	It configures the value for some programmable key features.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Dynamic Softkey	
Parameter	**ProgramKey***Extension**	**config.<mac>.xml**
Description	This configuration is not applicable for programmable hard key types.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Phone Keys->Dynamic Softkey	

The Key Name support list is as below:

Key Name	Default Type	Default Account	Default Label	Default Number	Default Extension
Redial	N/A	1			
Release	N/A	1			
Hold	N/A	1			
Mute	N/A	1			
Transfer	N/A	1			
Message	N/A	1			
Conference	N/A	1			
Handsfree	N/A	1			

Headset	N/A	1			
Up	N/A	1			
Down	N/A	1			
Left	N/A	1			
Right	N/A	1			
OK	N/A	1			
Cancel	N/A	1			
VolUp	N/A	1			
VolDown	N/A	1			

11.8 Wallpaper

Wallpaper is a picture which is used as the background of the IP phone. The phones have 5 default pictures. And user can also change it to custom wallpaper from personal pictures. The wallpaper is only applicable to H6/H6W IP phones.

Topics

11.8.1 Wallpaper Configuration

The following table lists the parameters you can use to change the wallpaper.

Parameter	**PhoneWallpaperURL**	**config.<mac>.xml**
Description	It configures the access URL of the custom wallpaper picture.	
Permitted Values	String within 64 characters	
Default	empty	
Web UI	Setting->display-> Wallpaper upload	
Parameter	**PhoneWallpaperDelete**	**config.<mac>.xml**
Description	The custom image file name which user wants to delete	
Permitted Values	String within 64 characters For example: custom.png	
Default	empty	
Web UI	Setting->display-> Wallpaper upload(delete the picture which is selected)	
Parameter	**PhoneWallpaperDisplay**	**config.<mac>.xml**
Description	Custom wallpaper image file name	
Permitted Values	String within 64 characters	
Default	default.png	
Web UI	Setting->display-> Current Wallpaper	

11.9.2 Custom Wallpaper Picture Limit

The wallpaper picture format must meet the following:

Phone Model	Format	Resolution	Single File Size
H6/H6W	PNG/JPG/JPEG/BMP	320 * 240	1MB

11.9 Call Display

Call Display is used in phone ringing, calling process, hold and other scenarios. This function is mainly used by users to configure the full name display method according to their own habits.

There are two main configuration items, defined as CallDisplayPart and CallDisplaySource.

- CallDisplayPart is used to define the call information display mode.
- CallDisplaySource is used to display the priority of the call number.

The following table lists the parameters you can use to configure call display.

Parameter	**CallDisplayPart**	**config.<mac>.xml**
Description	It configures Call Display Part.	
Permitted Values	0: Name Number 1: Number Name 2: Name 3: Number 4: Full Contact Info	
Default	0	
Web UI	Setting->Call Display-> Call Info Display Mode	
Parameter	**CallDisplaySource**	**config.<mac>.xml**
Description	It configures Call Display Source.	
Permitted Values	0 - Local Directory>Remote Phone Book>LDAP Directory>Network signaling 1 - Network signaling	
Default	0	

11.10 Notification Popups

This feature is used to control the popup of new voicemail and missed call.

- If the VMPopupEnable is set to true, the notification of voice mail and missed call will be popup when sip phone miss an incoming call or receive a voicemail.
- If the VMPopupEnable is set to false, the notification of voice mail and missed call will not be popup when sip phone miss an incoming call or receive a voicemail.

The following table lists the parameters you can use to configure notification popups.

Parameter	**VMPopupEnable**	**config.<mac>.xml**
Description	It configures to enable of disable the popup of voicemail and missed call.	
Permitted Values	false true	
Default	true	

11.11 IME optimization

In Halo R120 release, when the user uses an input method other than 123 (eg :abc ABC Abc 2ab…). The phone provides an input field to prompt the user for the current input character and displays the next few characters.

12. Advanced Features

Topics

12.1 6 way conference

Halo phone H3P/H3G/H6/H3W/H6W have the capability to launch a 6 way conference by local. After establish 3 way conference, user press ‘Conf’ button to add new user then press ‘Join’ button to merge new user to current conference.

In Halo R120 release, the phones support split/remove during conference.
The improvements includes:

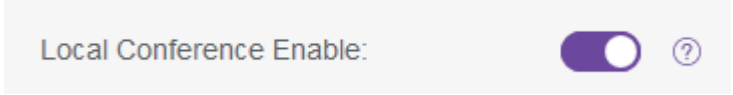
- Allow incoming call when there is active conference.
- Split conference to separated hold calls.
- Remove conference participant

The menu in conference state has changed. It has 6 menus now and “split” and “participant” are added.

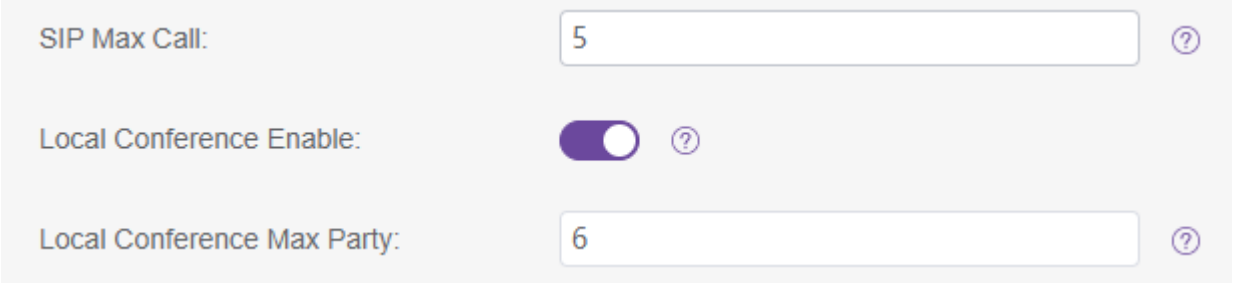
Topics

12.2.1 6 way conference Configuration on WEB for Halo phone

- Features—General:



- Features—General:



12.2.2 6 way conference Configuration parameters for Halo phone

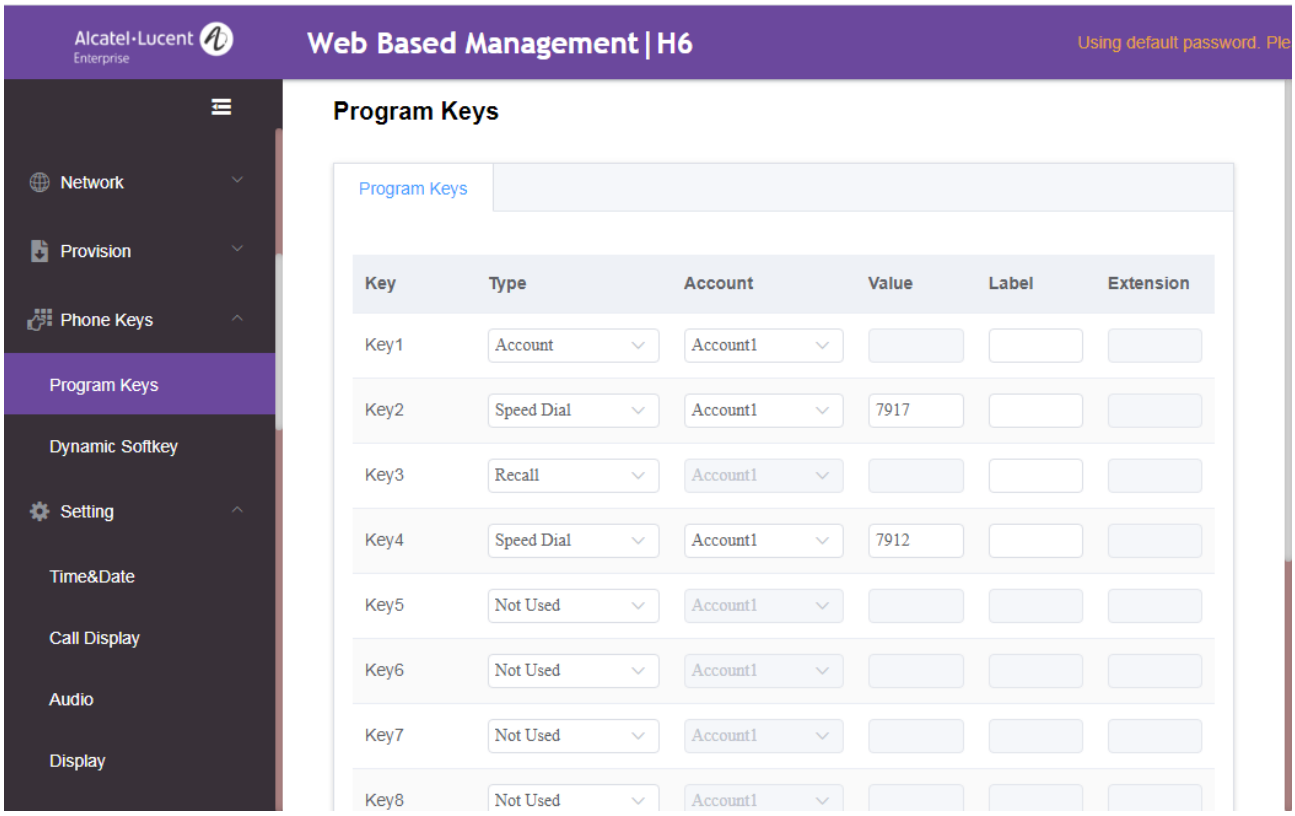
Parameter	**SIPLocalConfEnable**	**config.<mac>.xml**
Description	It enables or disables local conference function.	
Permitted values	true false	
Default	true	
WEB UI	Features->General	
Parameter	**SIPMaxCall**	**config.<mac>.xml**
Description	it define the max call capacity of phone	
Permitted values	1~5	
Default	2	
MMI UI		
WEB UI	Features->General	
Parameter	**LocalConfPartyMax**	**config.<mac>.xml**
Description	it define the max party capacity of phone conference	
Permitted values	3~6	
Default	3	
WEB UI	Features->General	

12.2 Hot Desking

Halo series phones all support Hot Desking feature with the same behavior.
Hot desking is a shared phone which can be used when employees are not in his office, and no hard phone in hand, then he can log in a shared phone by hot desking feature. Hot desking allows the user to clear pre-registration configurations of all accounts on the IP phone then login his own user account.
On the shared phone. You firstly need to assign a Hot Desking key.

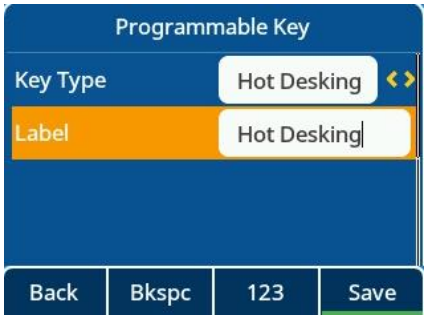
Topics

12.3.1 Hot Desking Key Configuration on WEB for Halo phone



12.3.2 Hot Desking Key Configuration on MMI for Halo phone

Long press a program key more than 2s, select the key type as Hot Desking.



Press programkey to activate Hotdesking for Halo phone.

Login your number to be registered for Halo phone:

12.3.3 Hot Desking Configuration parameters for Halo phone

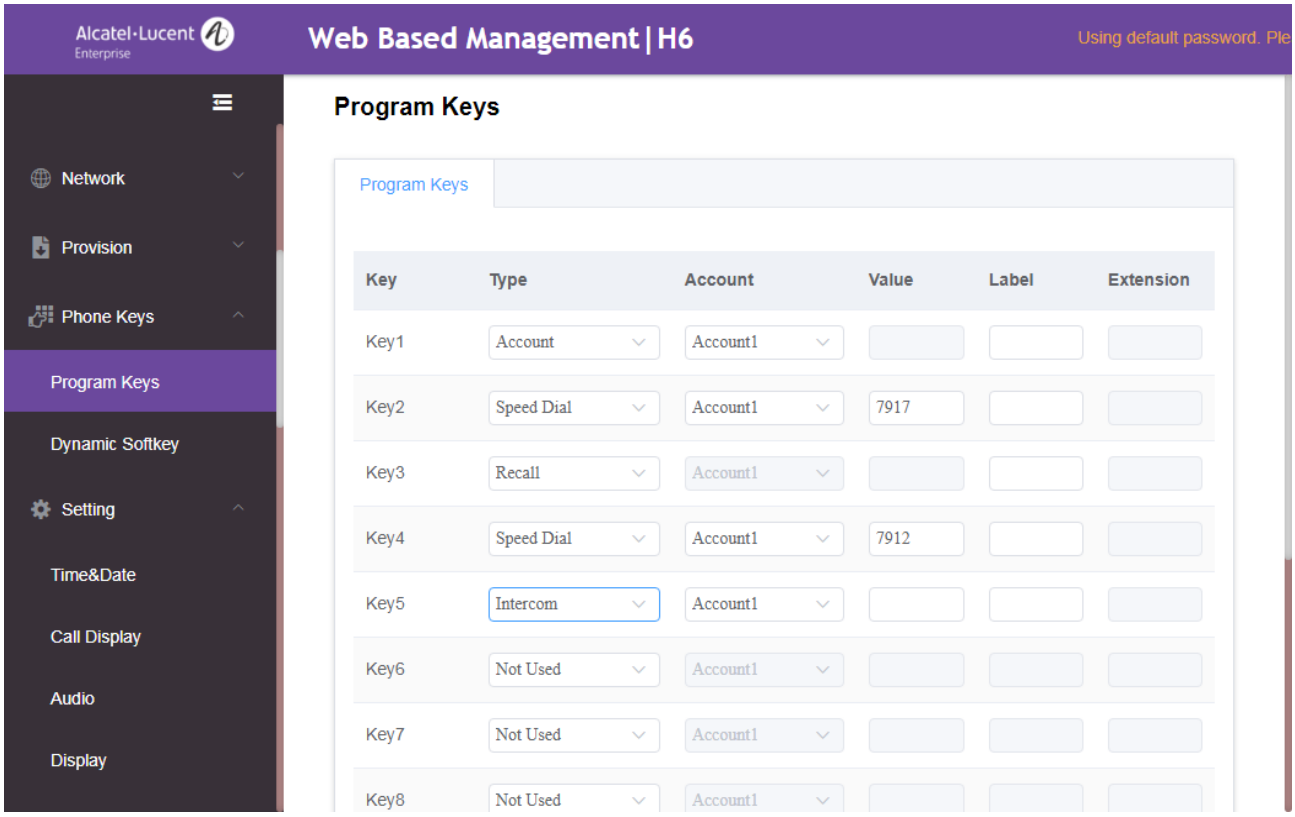
Parameter	PhoneProgKeyXType	config.<mac>.xml
Description	Programkkey configuration: X is the number of selected programkey	
Permitted values	11 - Hot Desking	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Hot Desking	
WEB UI	Phone Keys->Program Keys	
Parameter	PhoneProgKeyXLabel	config.<mac>.xml
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	

12.3 Intercom

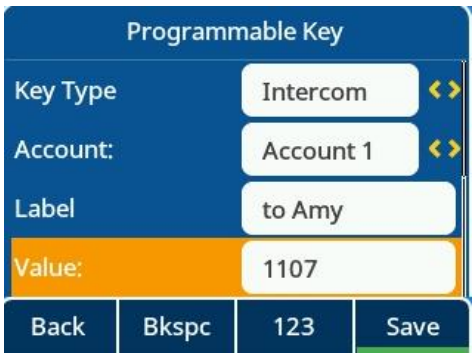
Intercom is a useful feature in an office environment to quickly connect with the operator or the secretary. You can press the intercom key to place a call to a contact that is answered automatically on the contact's phone as long as the contact is in idle state or in an active call.

Topics

12.4.1 Intercom Key Configuration for a programkey config on WEB



12.4.2 Outgoing Intercom Configuration on MMI

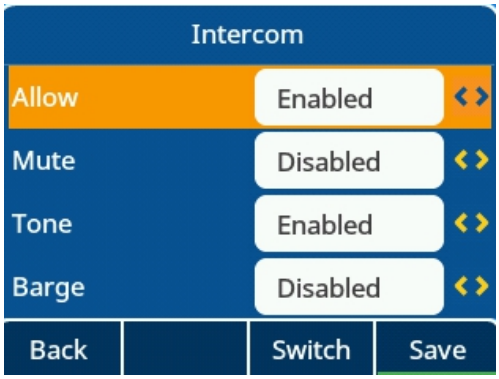


12.4.3 Outgoing Intercom Configuration parameters

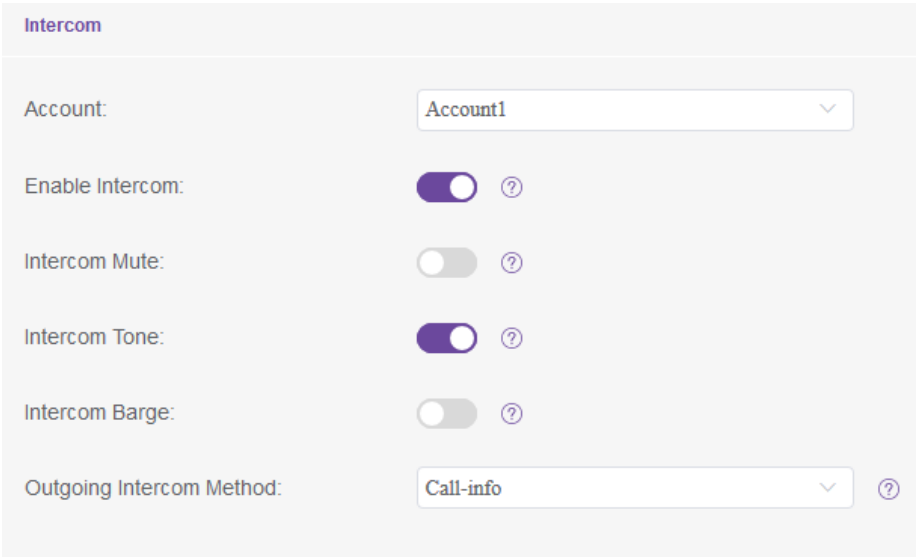
Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	21 - Intercom	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Intercom	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~8 for Halo phone	

Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use intercom	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the outgoing call number of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input the outgoingn call number for this programkey	
WEB UI	Phone Keys->Program Keys	

12.4.4 Incoming Intercom Configuration on MMI



12.4.5 Incoming Intercom Configuration on WEB



12.4.6 Incoming Intercom Configuration parameters

Parameter	**SIPAutoAnsweredAllowedX**	**config.<mac>.xml**
Description	If phone to true, the phone may auto answer to incoming call if requested by SIPUA layer.	
Permitted values	true false	
Default	true	
MMI Menu	Menu->Feature->Intercom->Account	
WEB Menu	Features ->Intercom-> Enable Intercom	
Parameter	**SIPAutoAnsweredMuteX**	**config.<mac>.xml**
Description	when the phone auto answer an intercom call , it will mute or not	
Permitted values	true false	
Default	FALSE	
MMI Menu	none	
WEB Menu	Features ->Intercom-> Intercom Mute	
Parameter	**SIPAutoAnsweredToneX**	**config.<mac>.xml**
Description	when the phone auto answer an intercom call , it will have beep voice or not	
Permitted values	true false	
Default	TRUE	
MMI Menu	none	
WEB Menu	Features ->Intercom-> Intercom Tone	
Parameter	**SIPAutoAnsweredBargeX**	**config.<mac>.xml**
Description	when the phone alreadt auto answer an intercom call ,for the second intercom incoming call, it will have auto answer it or not.	

Permitted values	true false	
Default	FALSE	
WEB Menu	Features ->Intercom-> Intercom Barge	
Parameter	**SIPGroupXIntercomType**	**config.<mac>.xml**
Description	it define the intercom Type for accountX	
Permitted values	allowed value : 0 - Call-info allowed value : 1 - Alert-info allowed value : 2 - Answer-mode	
Default	0-Call-info	
MMI Menu	none	
WEB Menu	Features ->Intercom-> Outgoing Intercom Method	

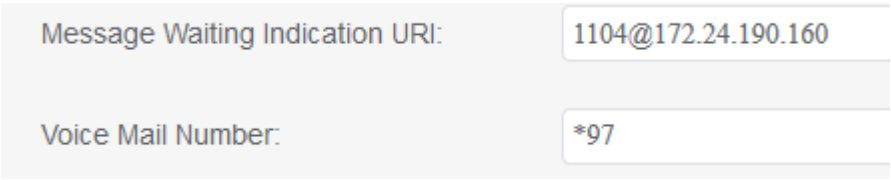
12.4 Voicemail

Voicemail is an application which can save voice messages from other user when phone is busy or unavailable. User can also send messages to other users by his voicemail box.

Topics

12.5.1 Voicemail configuration on WEB for Halo phone

Account->Advanced:



12.5.2 Voicemail configuration parameters for Halo phone

Parameter	**TelephonyVmNumberX**	**config.<mac>.xml**
Description	It configures phone voicemail number for accountX	
Permitted values	string	
Default	empty string	

MMI UI	Menu->Voicemail	
WEB UI	Account->Advanced	
Parameter	**SIPMessageWaitingIndicationUriX**	**config.<mac>.xml**
Description	It configures message waiting indication server address for account.it enables or disables phone to popup the message notification when receive new voicemail.	
Permitted values	string	
Default	empty string	
MMI UI	Menu->Voicemail	
WEB UI	Account->Advanced	

12.5 BLF

Halo series phones support BLF feature. BLF (Busy Lamp field) is a function which can monitor another phone number's call status and can display the status on the BLF programkey LED. You also can make speed dial call to the monitored phone number.

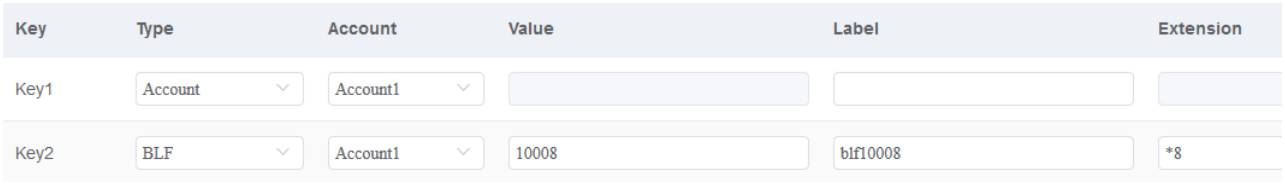
Led Status	Description
Solid	The monitored user is idle.
Fast-flashing	The monitored user receives an incoming call.
Slow-flashing	The monitored user is talking. The monitored user's conversation is placed on hold. The monitored user is dialing. The call is parked against the monitored user's phone number.
Off	The monitored user does not exist.

Topics

BLF configuration on MMI for Halo phone
BLF configuration on WEB for Halo phone
BLF configuration parameters for Halo phone

12.6.1 BLF configuration on MMI for Halo phone

12.6.2 BLF configuration on WEB for Halo phone



12.6.3 BLF configuration parameters for Halo phone

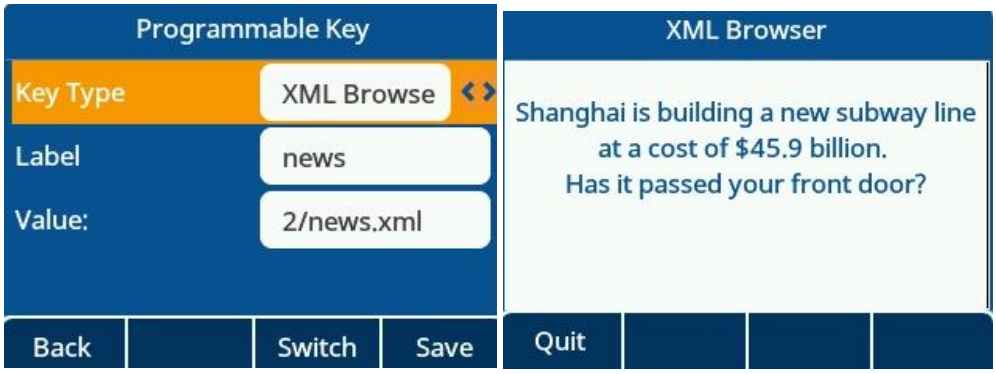
Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	59 - BLF	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as BLF	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~8 for Halo phone	
Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use intercom	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the monitored phone number of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input the outgoingn call number for this programkey	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXExtension**	**config.<mac>.xml**
Description	input the externsion number of this programkey,usually is a pickup code or prefix	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input the pickup code prefix for this programkey	

WEB UI	Phone Keys->Program Keys

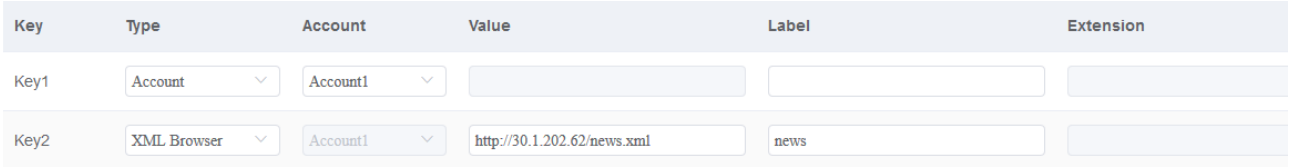
12.6 XML Browser

Halo series phones support XML Browser function with the same behavior.
The XML browser feature allows users to develop and deploy custom services which meet user's functional requirements on the server. Users can customize particular applications, such as weather report, stock information, Google search, news service, and so on.

Topics



12.7.1 XML Browser configuration on WEB for Halo phone



12.7.2 XML Browser configuration parameters for Halo phone

Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	19 - XML Browser	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as XML Browser	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	

WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the http/https path of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a path to get from server	
WEB UI	Phone Keys->Program Keys	

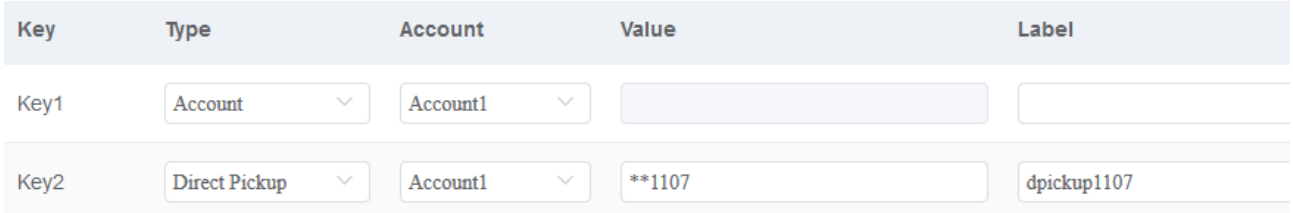
12.7 Call Pickup

You can use call pickup to answer someone's incoming call on your phone using a pickup code. Halo phones support Directly Call Pickup and Group Call Pickup types.

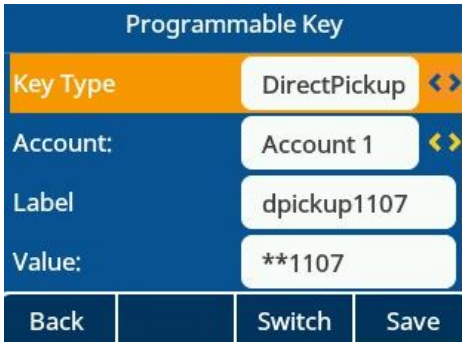
- **Directly Call Pickup**: allows you to pick up incoming calls to a specific phone.
- **Group Call Pickup**: allows you to pick up incoming calls to any phone within a predefined group of phones.

Topics

12.8.1 Directly pickup configuration on WEB for Halo phone



12.8.2 Directly pickup configuration on MMI for Halo phone

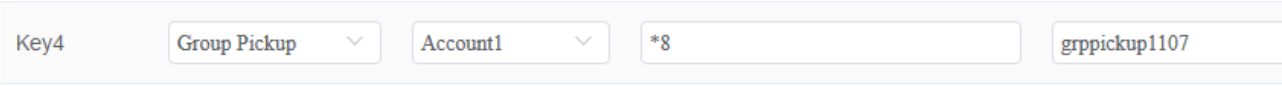


12.8.3 Directly pickup configuration parameters for Halo phone

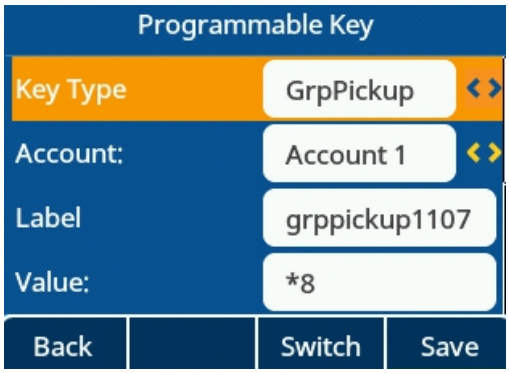
Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	

Permitted values	15 - Direct Pickup	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Direct Pickup	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~8 for Halo phone	
Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use Direct Pickup	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the pickup code plus the number you want to pickup	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define pickup code plus the number	
WEB UI	Phone Keys->Program Keys	

12.8.4 Group pickup configuration on WEB for Halo phone



12.8.5 Group pickup configuration on MMI for Halo phone



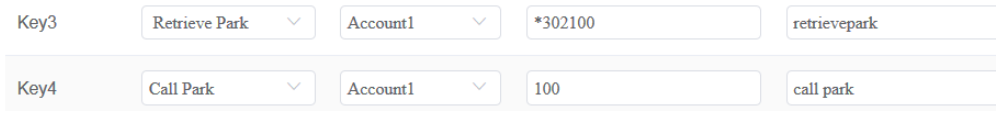
12.8.6 Group pickup configuration parameters for Halo phone

Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	16 - Group Pickup	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Group Pickup	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~8 for Halo phone	
Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use Group Pickup	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the pickup code	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define pickup code	
WEB UI	Phone Keys->Program Keys	

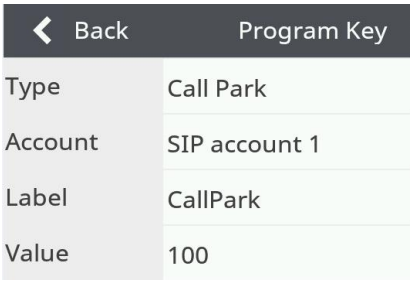
12.8 Call park & retrieve

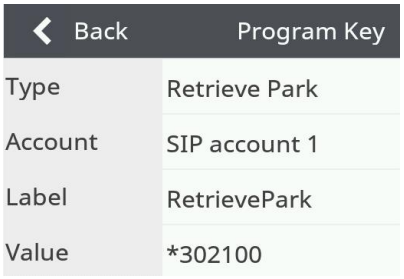
Call park allows users to park a call on a special extension and then retrieve it from another phone (for example, a phone in another office or conference room).

Topics



12.9.1 Call park & retrieve configuration on MMI for Halo phone





12.9.2 Call park configuration parameters for Halo phone

Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	17 - Call Park	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Call Park	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~3 for H3P/H3G/H3W 1~4 for H6/H6W	
Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use Call Park	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	

MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the Call Park number	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a number	
WEB UI	Phone Keys->Program Keys	
Parameter	**CallParkMethod**	**config.<mac>.xml**
Description	describe the method when Call Park	
Permitted values	0 - Direct call 1 - Blind transfer call	
Default	1	

12.9.3 Call retrieve configuration parameters for Halo phone

Parameter	**PhoneProgKeyXType**	**config.<mac>.xml**
Description	X is the number of selected programkey	
Permitted values	58 - Hold	
Default	0	
MMI UI	select one programkey then long press it for 2s, select KeyType as Retrieve	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXAccount**	**config.<mac>.xml**
Description	X is the accountid	
Permitted values	1~3 for H3P/H3G/H3W 1~4 for H6/H6W	
Default	1	
MMI UI	select one programkey then long press it for 2s, select the account you want to config to use Retrieve	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXLabel**	**config.<mac>.xml**
Description	input the name of this programkey	
Permitted values	strings	
Default	empty string	
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a name	
WEB UI	Phone Keys->Program Keys	
Parameter	**PhoneProgKeyXNumber**	**config.<mac>.xml**
Description	input the Call Retrieve prefix and number	

Permitted values	strings
Default	empty string
MMI UI	select one programkey then long press it for 2s, input strings for Label to define a number
WEB UI	Phone Keys->Program Keys

12.9 Call Completion

When user places a call and the callee is temporarily unavailable to answer the call, SIPMMI will save the callee's number and use the SUBSCRIBE/NOTIFY method to subscriber callee's status.

When the phone receives NOTIFY message with "terminal" status:

- If the phone is idle, the phone screen will prompt whether to dial the number; If yes, phone will dial the last outgoing failed number
- If the phone is not idle, the phone will not prompt until the phone is idle

The following table lists the parameters you can use to configure call completion feature.

Parameter	**CallCompletionEnable**	**config.<mac>.xml**
Description	It enables or disables Call Completion feature.	
Permitted values	true false	
Default	false	
WEB Menu	Setting->General	

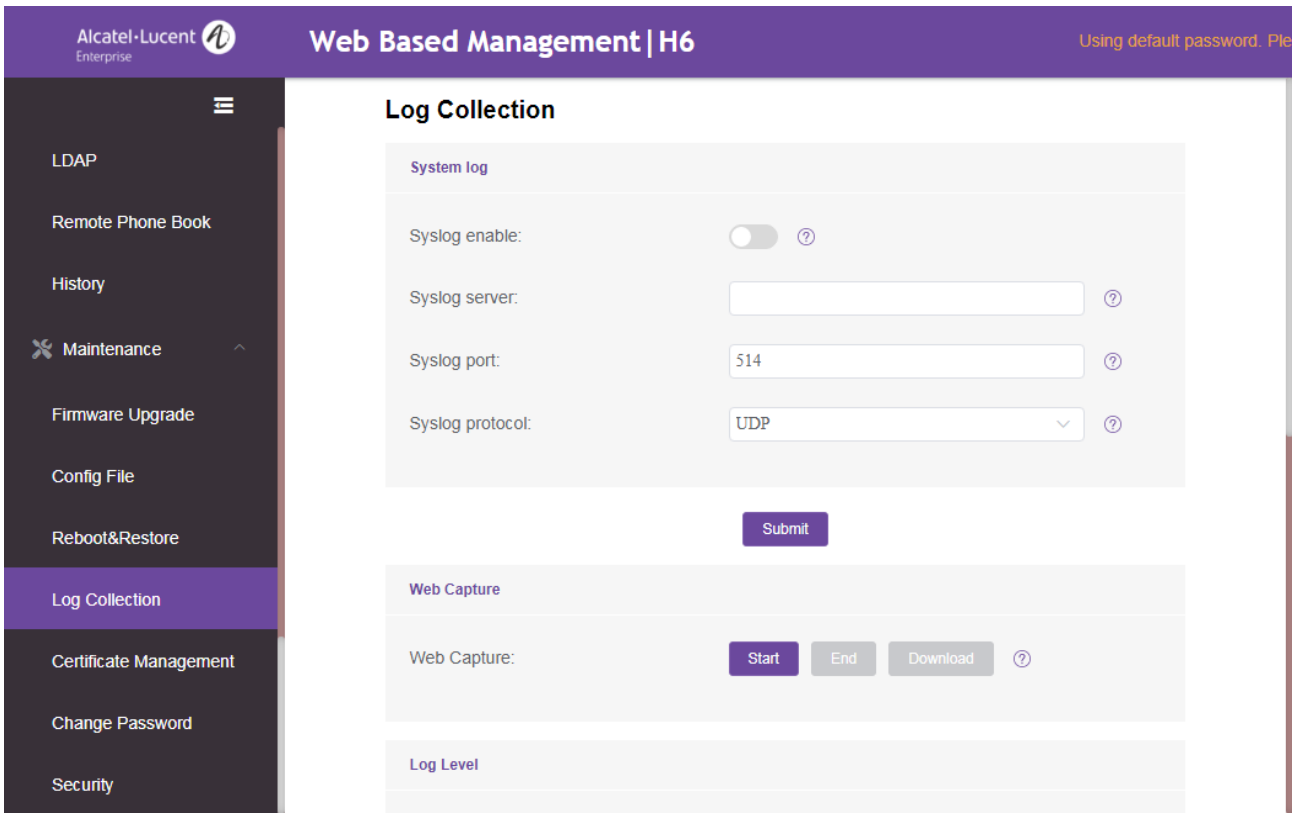
13. Trouble shooting

When the phone is not functioning normally, the user can try the following methods to restore normal operation of the phone or collect relevant information and send a problem report to the manufacture's technical support for analysis.

Topics

13.1 Log collection

Log information is helpful when encountering an exception problem. In order to get the phone log information, log into the phone web page, go into the menu: Maintenance -> Log Collection to phone the log level, and download the log files. Then you can send the log files to the technician to locate the problem.



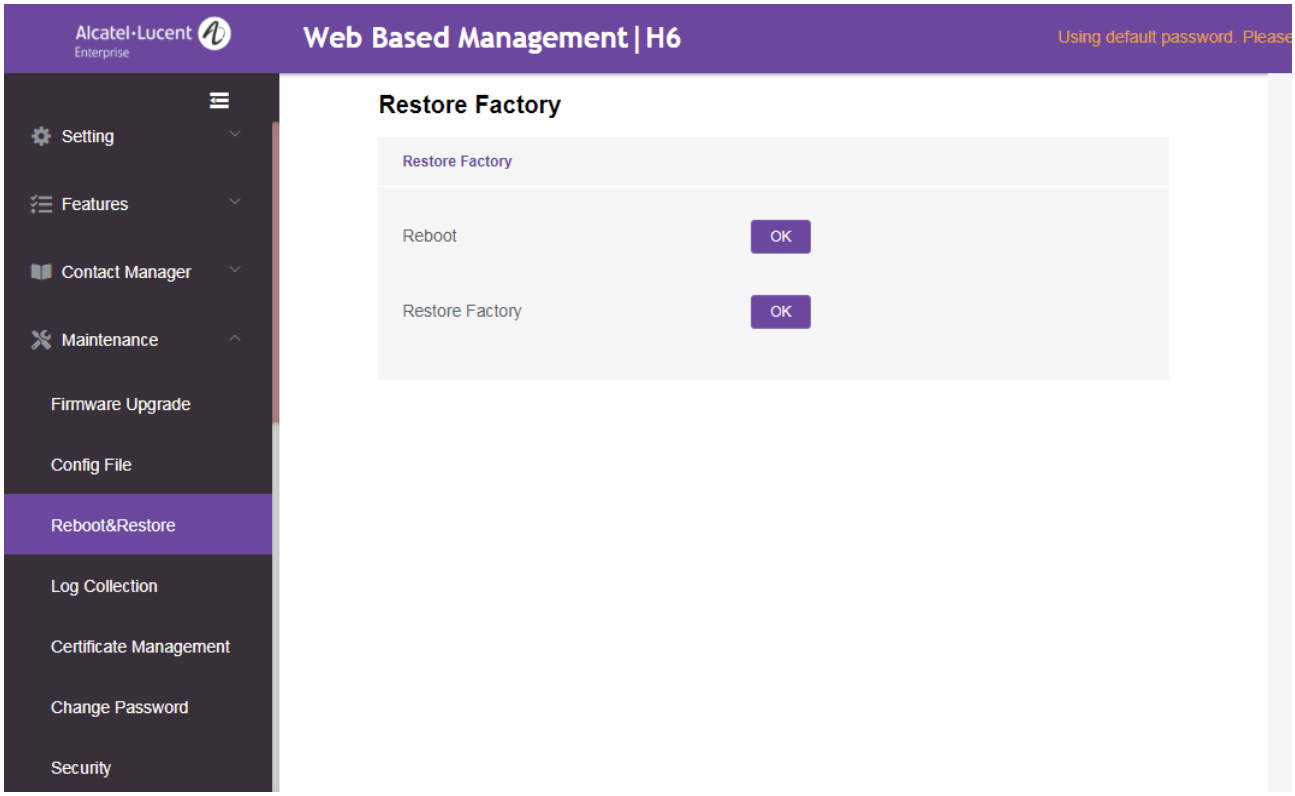
13.2 Reset device to factory default

Topics

Reset device to factory default via web
Reset device to factory default via phone MMI
Reset device to factory default by phone combination keys

13.2.1 Reset device to factory default via web

Go into the phone web menu: Maintenance-> Reboot&Restore



13.2.2 Reset device to factory default via phone MMI

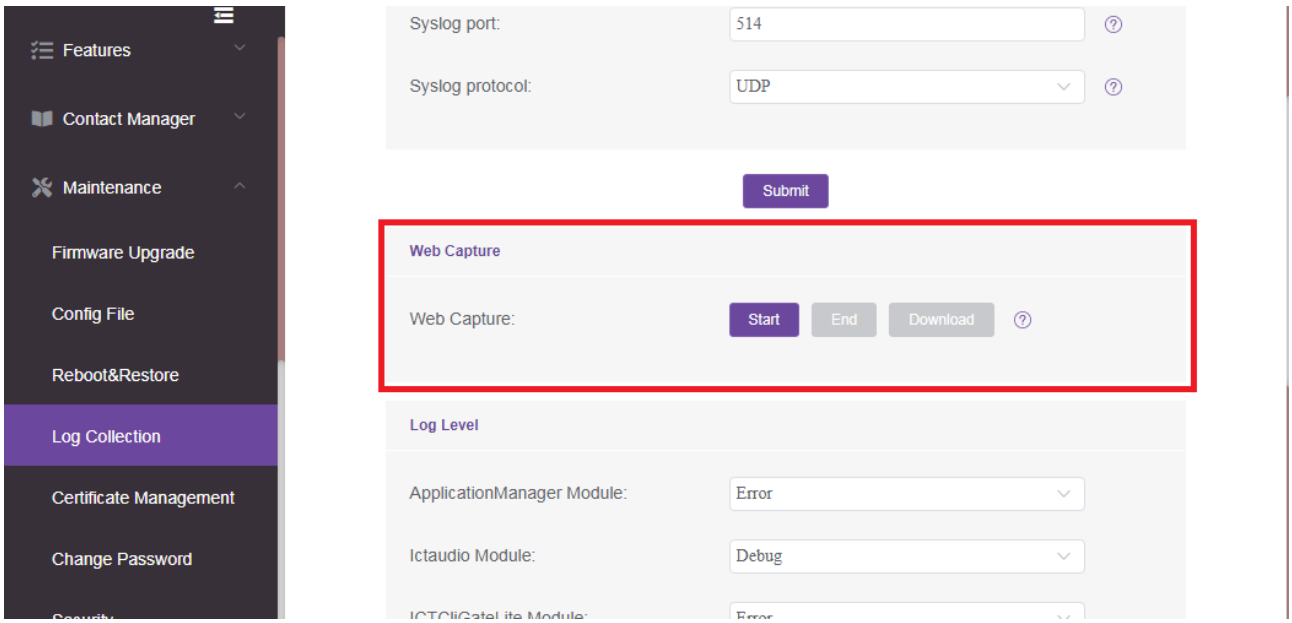
For Halo series phones, user can go into the phone MMI: Advanced Setting -> Restore factory

13.2.3 Reset device to factory default by phone combination keys

For Halo series phones, in phone idle status, user can long press conference hard key longer than 10s,then the phone will popup "This action will restore all configurations to factory", if select ok, the phone popup "Reset... please wait", then the phone will restore to factory, all the configuration will be erased.

13.3 Packets Capture

Sometimes it is helpful to dump the network packets of the device for issue identification. To get the device packets, log in to the device web portal, open the page [Maintenance] >> [Log Collection] and click [Start] in ”Web Capture” section. The user then performs the relevant operations such as activating/deactivating a line or making telephone calls and clicks the [Stop] button in the web page when the operation is finished. Then the user can press the “Download” button to download the packets for analysis.



13.4 One key reboot

The phone provides a quick way to reboot the phone. You need to press the C key for 10 seconds. The phone will pop up an inquiry box to ask whether to restart.
Press ok: Will reboot in a few seconds
Press cancel： Cancel the operation

13.5 Log Files

You can choose to generate the log files locally or sent to syslog server in real time, and use these log files to generate informational, analytic and troubleshoot phones.

Topics

13.5.1 Call log backup configuration

The IP phone will automatically upload call log file at regular intervals to the provisioning server or a specific server. If a call log file exists on the server, it will be overwritten. The IP phone will request to download the calllog.<MAC>.xml according to its MAC address from the server during auto provisioning.

The following table lists the parameters you can use to configure call log backup feature.

Parameter	**BackupUploadTime**	**config.<mac>.xml**
Description	It configures the time between uploading a backup file.	
Permitted values	TEXT	
Default	3600	
Parameter	**BackupURL**	**config.<mac>.xml**
Description	It configures the url which is used to upload and download the backup file.	
Permitted values	TEXT	
Default	empty	

Parameter	BackupuploadMethod	config.<mac>.xml
Description	It configures the way to upload files(post/put).	
Permitted values	0 - put 1 - post	
Default	0	
Parameter	CallLogBackupEnable	config.<mac>.xml
Description	It configures to enable or disable callLogBackup	
Permitted values	false true	
Default	false	

13.5.2 Syslog configuration

User can also configure the IP phone to send syslog messages to a syslog server in real time.

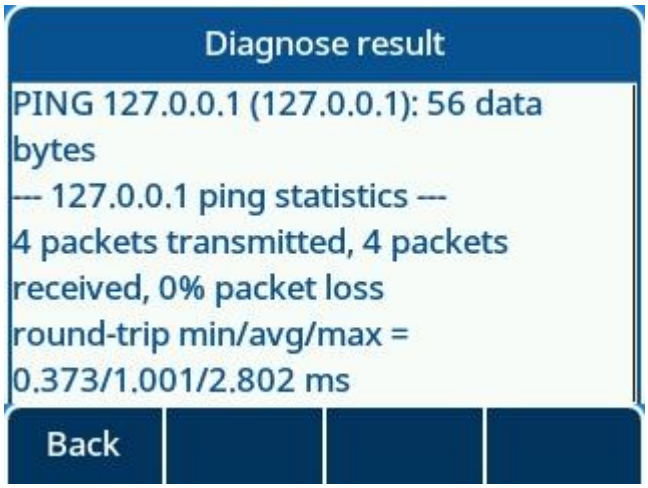
The following table lists the parameters you can use to configure syslog logging.

Parameter	LogRemoteServerExist	config.<mac>.xml
Description	It configures to enable or disable syslog.	
Permitted values	false true	
Default	false	
Web UI	Maintenance->Log Collection-> Syslog enable	
Parameter	LogRemoteServerAddress	config.<mac>.xml
Description	It configures remote syslog server address.	
Permitted values	IP address or domain name	
Default	empty	
Web UI	Maintenance->Log Collection-> Syslog server	
Parameter	LogRemoteServerPort	config.<mac>.xml
Description	It configures remote syslog server port.	
Permitted values	IP port	
Default	514	
Web UI	Maintenance->Log Collection-> Syslog port	
Parameter	LogRemoteServerProtocol	config.<mac>.xml
Description	It configures remote syslog server protocol.	
Permitted values	udp – udp tcp - tcp	
Default	udp	
Web UI	Maintenance->Log Collection-> Syslog protocol	

13.6 Network Diagnostics

User can use ping and traceroute diagnostics for troubleshooting network connectivity via phone user interface.

User can go into the phone UI: Advanced Setting -> Net Diagnose, then input the IP address to trigger ping or traceroute command. The diagnose result will be displayed on the screen.



13.7 Packets Capture

13.7.1 Ethernet Software Capturing Configuration

Connect the Internet port of the IP phone to the Internet and the PC port of the IP phone to a PC. Before capturing the signal traffic, make sure the IP phone can span data packets received from the Internet port to the PC port.

The following table lists the parameter you can use to configure span to PC port.

Parameter	**SpanToPcType**	**config.<mac>.xml**
Description	It enables or disables the IP phone to span data packets received from the WAN port to the PC port.	
Permitted values	0 IDLE 1 LAN	
Default	0	