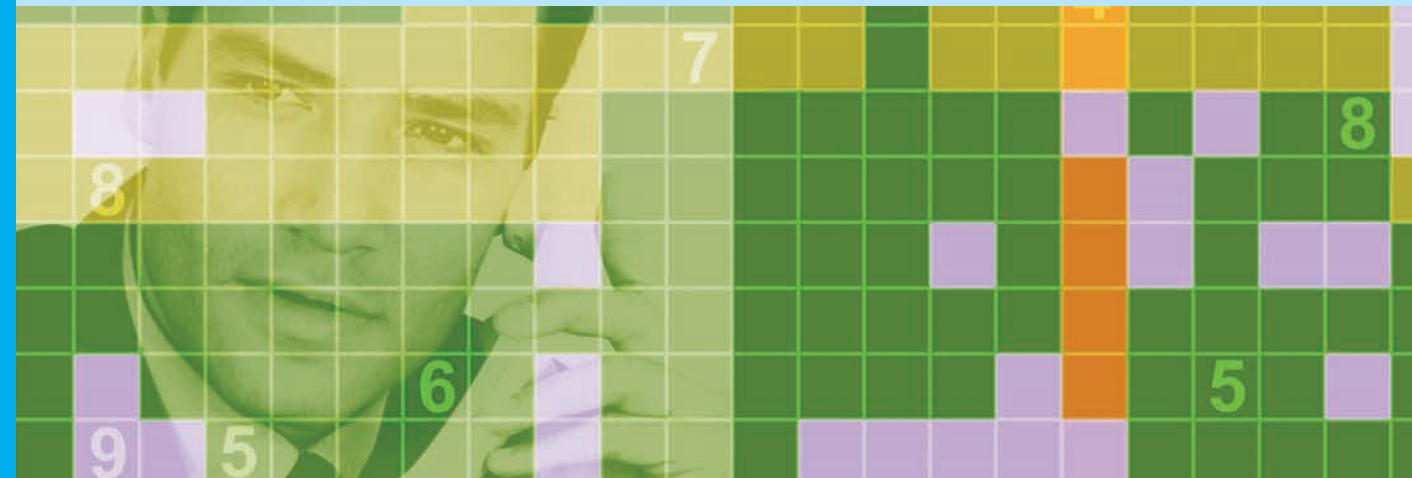# DS200 SERIES
IP MIGRATION

Improved DS200 Series with the new CPUIV is a new generation IP based solution that converges advanced IP skills with the reliability of TDM voice processing for SMB and CME. System supports & manages both data, video and voice traffic in one powerful platform.

IP Telephony

IP telephony provides a way to extend communication to employees in their workspaces, whether they are in main campus locations, at branch offices, working remotely or mobile.

DS200 supports SIP signaling protocol for a wide range of devices including :

- **Standard SIP Phones** (Allowing the connection of SIP Supported IP Phones, softphones)
- **WiFi SIP Phones** (Allowing the connection of SIP Supported & WiFi Enabled Phones)
- **Proprietary SIP Phones** (Allowing quick access to the entire spectrum of DS200 advanced features and applications)
- **IP Dects** (Allowing the connection of IP DECT handsets via IP DECT Base Stations)
- **SIP Enabled IP Trunk** (Allowing connections to ITSPs for more economically IP solutions)
- **Other SIP Devices** (for the SIP Devices using RFC 3261, RFC 3264, RFC 3310, RFC 2327 and RFC 4028)

Remote Access to your Office
Through your Softphone in your laptop, when you are out of the office, just find an Internet connection. Then use your SoftPhone and by registering to your office exchange, become as an extension like you are in the office.

You might use your IP Telephone at your home when you are sick or if you are a home-office employee as well. There will be no difference of using your desk-phone in the office and the IP Phone at your home.

SoftPhone
IP Softphone is an additional module that can be installed as a plug-in module. Users that have the module installed can make calls directly from the softphone without the need of a physical phone. The user's laptop acts as an IP phone and a built-in dial pad allows for easy dialing.

All SIP Supported Softphones and the Softphone in your WiFi Mobile Device can register to DS IP and start making video calls or even use the Conference module.

Video Call
DS200 supports peer-to-peer and codec independant video calls for both IP extensions and IP lines.

Extensions of the DS200 such as VideoPhones and SoftPhones are able to start videoconferencing easily. All video codecs - H263, H263-1998, H.264 (low quality), H.264 (high quality) - are supported.

Peer-to-peer communication
DS200 uses less system resources in the calls between IP Extensions. This is now possible through P2P (Peer-to-Peer) Communication between IP ports.

Supported Protocols
DS200 supports H.323 and SIP protocols at trunk (line) interface whereas SIP is the protocol that is supported at extension interface.

Supported Codecs
You will have many codecs supported with DS200. If you have MGW1 in your system, then you will have support for G711, G729, G729AB. If you have MGW2 in your system, then you will have more; G711, G729, G729AB, iLBC, T.38, G.723.

Encryption
DS200 respects your security and provides secure conversations through sRTP

(Secure Real-Time Transfer Protocol) and SIPs (SIPSecure) along with TLS (Transport Layer Security).

SIP Algorithms for Voice Quality
Now DS200 is equipped with **Dynamic Jitter Buffer** and **Package Loss Concealment (PLC)** . Also DS200 supports **Advanced Echo Canceler** algorithms and thus echo is not a problem for the system.

With the help of **Voice Activity Detection (VAD)**, silence periods are not sent to the network, thus bandwidth is protected. This feature can be supported by the CODEC G729A and must be used at both sides of the connection.

Automatic Gain Control (AGC) checks the emitted voice signal and raises or lowers the volume of the signal if it is respectively weak or strong.

DS200 offers you **ToS** and **DiffServ** as **QoS** abilities. By the use of these abilities, DS200 can record & monitor QoS parameters and use QoS data for finding alternative routes.

Oversubscription might cause declines in Bandwidth thereby the decline in voice quality. By the help of **Call Admission Control**, DS200 doesn't allow subscription above the defined limit.

DTMF Transmission
DS200 supports both In-Band (G711 & DTMF Relay) and Out-of-Band (SIP INFO and RFC 2833) methods for DTMF transmission.

SIP Network Elements
The New CPU provides you to have benefits of DHCP Feature. If you enable connection to DHCP server, you do not need to assign IP adresses manually to the CPU Card. Please note that DHCP cannot be used for MGW and VoIP Cards.

DNS Feature is to be used in the new CPU of DS200. Different DNS adresses can be defined for the Ethernet ports on the new CPU.

Now the new CPU of DS200 comes with an Integrated Firewall that protects the system from malicious threats. By this way, system does not allow access of unauthorized elements.

DS200 offers STUN Support for NAT Traversal. With the help of STUN server residing at the public side of the NAT, the PABX connects its users to unknown public network and also lets them receive calls from public network. NAT Traversal feature to be enabled to connect to the WAN via a router.

The New CPU provides **Session Timer** to keep an effective call operation. Session timer is a method to check the continuity of the calls.

New System Features

Presence
IP Phones with BLF Feature, SoftPhones and Karel Digital Phones & DSS Modules have the ability to inform you about the status of the other extensions or lines. You will be notified about the availability of the extensions through the corresponding LED activity. Additionally if you have a SoftPhone then you might have all supported indications such as Online, Offline, Ringing, Busy, Away and Idle. You may also add messages just next to your status.

Instant Messaging
SIP Extensions of DS200 can send and receive messages between each others instantly. You may make use of this feature through IP Desktop Phones and Soft Phones. The protocol has been built to provide opportunity to see messages even if you were offline at the time the message was sent. As a storage for the offline messages, memory of 500 kilobytes has been made available. Finally if you have a softphone, then you may start chatting as you do in commonly used messenger softwares.

Integrated Auto-Attendant
The new CPU4 comes with an onboard AA Module. The AA Messages which were previously stored in EVM200 Card only are now in CF Memory with a capacity of 4 Channels.

Thanks to CF Memory Structure, you may easily drag and drop your AA Files from your computer to CF. You are free to upload wav file of any size into the memory.

For System Messages, Voice Mail and larger channel capacity, you may switch to the EVM Card.

Enhanced Phonebook
With the help of the LDAP Server in the new CPU, you may now reach to a remote Phonebook, which may be a phonebook out of your central office, scroll through it and search people by their names.

Additionally you may use the Local and Central Phonebook in your system as well. The users of the new Operator Console, NT30D, are now allowed to use Dial by Name feature.

Internal Music
If you would like the calling parties listen to a music while they are waiting, you may select a music file which is in wav format and upload it to CF.

Finally you may easily update the Master Software using MIB Browser.

Hardware Improvements

IP Capacity
DS200 Family which includes DS200M/DS200S/DS200 can have Max. 750 IP Extensions and 100 IP Trunks. The Media Gateway of DS200 has Max. 192 Channels.

Higher Capacity
The New CPU Card in DS200 brings more capacity for the needs of the more advanced system. The CPU Card includes a Compact Flash (CF) Memory of 4 GigaBytes which can be increased. Main Softwares, Log Files, Call Records, Auto Attendant Messages, all kinds of Statistics, Alarm Messages and more are stored in this CF Memory.

Capacity for Call Records
Thanks to increased capacity of CF, the total number of the stored call records is now 2.000.000.

Alarm Software
You may view the status of the DS200 systems installed in different locations through this interface. You may even upload different maps to the software and place your DS200 systems on the map.

In case of an alarm situation, the Software will warn you with both visual and acoustic warnings. Alternatively, you may register your E-mail Adress to receive alarm notifications through e-mail.

You might edit & revise the Alarm messages as to your needs.

SNMP
Integrated SNMP provides central management over multisite exchanges.

SNMP Agent Version 2 is integrated in the new CPU. Thereby you do not need to install an agent to your computer.

Through a MIB Browser you may takeover all the Multisite DS200 IPs and change / view the parameters indicated below:

• The status of system slots
• Capacity of the cards installed in slots
• Version of the System SW
• Port Access Codes
• LCR
• Statistics
• Alarms on the system

Operating System
Thanks to the Linux, The DS200 IP is now more flexible and open to the future applications and the application development will be surely faster.

Interface (LAN)
The new CPU card has two Ethernet connectors onboard. One is used to connect a PC for system maintenance & programming and for IP extensions. The other one is for the IP trunks.

Integrated NKS
NKS (Net-Console Server) is used as an interface for all CTI Applications in DS200. New CPU has embedded NKS.

System Tools for Maintenance & Programming

Multi PABX Programmer
You may query or update the Master Softwares of the DS200 systems in different locations from a centralized computer through this Software. By this way, you do not have to visit each location to update system software.

Automatic Backup Manager
All the important datas of your DS200 systems in different locations can now be backed up faster and easier through this Software. All you need to do is to add DS200 IPs to the Backup List of the Software and start the Backup Process. Plus, you may schedule the Backup Process and leave!

Maintenance

Updating the Master SW inside the New CPU might be done through different connections such as:

- TELNET (for updating the Master SW in the same network of the New CPU)
- TFTP (for updating the Master SW remotely)
- SNMP (for updating the Master SW remotely and for updating SWs of the Multisite Exchanges)

Logging

Due to the embedded NKS in new CPU, you do not have to install a seperate NKS to a computer. Simply explore the CF, find the Log Folder and check what you need.

Easy File Transfer

Thanks to the CF Structure, you may now see what's inside in CF as file trees. If you want to make changes in the files, simply drag and drop your files.

Call Initiation Services (User)

- Marked Call
- Account Coded Call
- Forced Account Coded Call
- Marked and Forced Account Coded Call
- Changing forced account code password
- Last Number Redial
- Common Pool Entry
- Calling from Common Pool

- Last Number Auto-Dial
- Line transfer to an Extension
- Line Transfer to Extension On Hold
- Line Transfer to Ringing Extension
- Line Transfer to Ringing Extension with Indication
- Selective Line Transfer to Extension On Hold
- Multiple Conference

The Call Answering Services (User)

- Selective Call Pickup
- Group Call Pickup

- Group External Call Pickup

Other Call Control Services (User)

- Call Hold or Call Park
- Call Transfer

- Retrieving a Parked Line
- Call Back

Line Statistics

You may now view the traffic over a line through IDEA. Thus, optimizing the line capacity becomes easier. The records are kept in CF Memory.

Features for SIP Extensions

DS200 offers rich features to all SIP extensions above SIP standards.

- Account Coded Call
- Forced Account Coded Call
- Marked and Forced Account Coded Call
- Changing forced account code password
- Password dialing from another extension
- Last Number Auto-Dial
- Redial
- Password define/change
- Phone lock
- External calls from locked phone
- Reminder Service (with - without message)
- Time/date setting
- Temporary - Permanent Absent Message

- Call Back
- Leaving message to other extensions
- Parked Call Retrieve
- Listening to messages
- Door opener
- Name display
- PBX group log-in / log-out
- Call pick up
- Group call pick up
- Group external call pick up
- Line-line connection
- Alarm service

Whereas Karel IP Phones can use more ... :

- Retrieving a Call Parked through One's Own Phone
- Retrieving a Call Parked through Another Phone

- Line Drop
- Line-Line Connection
- Line Voice Level Control

Call Forwarding Services (User)

- Follow Me
- Remote Follow Me

- Follow Me Secretary Mode

The Password Services (User)

- Password Define
- Changing Password
- Telephone Lock

- Password Dialling
- Password Protected Line Access

Other User Services

- Parallel Ringing / Tone on Busy
- Reminder Service
- Do Not Disturb
- PBX Group Log-In / Log-Out
- CLIR
- Adjustable Ring Tone Volume
- Adjustable Ring Tone Type

- Adjustable Volume Level for Handsfree
- Adjustable Volume Level for Handset
- Adjustable Volume Level for Microphone
- Adjustable Volume Level for Keys
- Adjustable Light Volume for the Screen
- Programming DSS Keys

The Services Related to Operator

- Date Setting
- Time Setting
- Wake-up Service
- Group Wake-up Service
- Selective Call Pickup from the Queue (Operator Telephone)
- Calls in Queue are visible (Operator Telephone)

The Services Related to the Hotel Room

- Hotel Room Cleanness Status Notification
- Changing Hotel Room Usage Status
- Hotel Room Query
- Group Hotel Room Query
- Check-in/Check-out
- Meet Me Service
- Minibar Account

The Services Related to Reporting

- Deleting a Record from the Call Record Listing
- Call Record Listing of a Specific Extension
- Call Record Listing
- Resetting the Call Record Counter
- Total Cost Listing
- Night Guard Code

The Services Related to Voice Mail Boxes

- Temporary Absent Message
- Permanent Absent Message
- Leaving A Message to An Extension
- Listening to New Messages
- Listening to Entire Messages
- Reminder Service (with - without message)
- Forwarding incoming calls to Voice Mailbox

The Services Related to DISA

- Leaving Message to an Extension through the DISA Line
- Listening to the Messages through the DISA Line

Licencing

You will have to purchase Licences for SIP extensions & SIP / H.323 lines as well as Presence, Instant Messaging, Call Recording & PC Console applications. The licenses available in DS200 are as follows :

- SIP Extensions
- SIP Trunks
- H.323 Trunks
- Proprietary IP Extensions
- MGW Channels
- MGW Channels (Encrypted)
- Presence & Instant Messaging
- Net-CM & Net-Console Activation
- Web-CM & Net-Console Activation

DS200 IP with the NEW CPU

Linux Operating System · Single Structure – Converged System · IP, Analog, Digital Modules · ISDN PRI/BRI Support · Up to 32.000 TDM Ports · 750 IP Extensions · 100 IP Trunks · CID · LCR · VoIP - MGW · SNMP Agent · LDAP Support · IP Phone · IP Softphone · Videophone · SIP enabled Wi-Fi Phone · SIP enabled Smart GSM Phone · IP DECT System · IP Facsimile · Remote Extension without VPN · Presence · Instant Messaging · HD Audio Quality for IP Phones · QoS · sRTP/TLS Security · Embedded Auto Attendant Software · Unified Messaging · Auto Attendant & Voice Mail Module · Remote Management · E-mail Alarm Message Notification · CDR - NetCM / WebCM · Central Phonebook · Migration Support for old Systems · Alarm Features

KAREL`