



# HiPath DX Real Time Communication Server

HiPath DX Version 9.2 delivering the business benefits of IP communications



- IP Trunking and IP desktop capability through the HG3500-DX family of integrated gateways
- Reduced costs and improved efficiency through the convergence of existing voice and data networks
- A smooth migration path to convergence, whilst maintaining existing investment in traditional telephony hardware
- Increased application capability and mobility to mirror business changes
- The benefits of an IP infrastructure without sacrificing feature richness, availability, and reliability

The HiPath DX communications server, now at Version 9.2, is an IP/SIP communications platform incorporating switching functions, a rich feature set and offering open interfaces and gateways delivering the benefits of network convergence and collaborative applications.

HiPath DX is able to work seamlessly across circuit switch or data network infrastructures, integrates with other products in the HiPath architecture and supports a wide variety of fixed (analogue, digital and IP) and mobile workpoints.

HiPath DX is part of the HiPath range of communication servers. It supports common interworking between other HiPath platforms, common applications and the optiPoint range of workpoints.

HiPath DX is available in two variants, HiPath DX and HiPath DXR. Both platforms provide customers with a modular, flexible system. The HiPath DX open architecture ensures that systems can be upgraded and reconfigured, with minimal disruption to the customer. Both platforms offer patch panel connectivity for ease of moves and changes, whilst HiPath DXR is exclusively available in data standard 19 inch rack mounting.

The latest release, Version 9.2, provides SIP Trunking. HiPath DX standalone systems and networks now offer convergence to a full SIP environment including interworking with the very latest Siemens platform, HiPath 8000.

## Networking and SIP/IP

HiPath DX provides:

### Private networking

HiPath DX is able to operate in either a standalone capacity, or in a mixed networked environment with other data

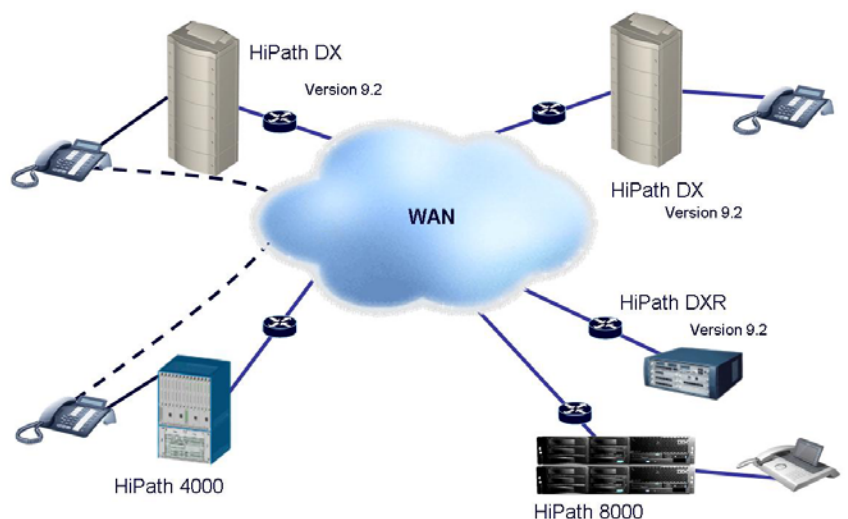
- Addition of SIP Trunking to the HG3500-DX family of HiPath DX IP Gateways

HiPath DX

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### Common Connectivity and SIP Switching



circuit switch devices. HiPath DX can be seamlessly integrated into existing iSDX networks, with full commonality and transparency of features and facilities. HiPath DX can also provide private network emulation (PNE) across the PSTN, networked ACD and networked key system working (both in the office and at home).

HiPath DX supports a full range of analogue and digital interfaces: AC15, DC5, E&M, DPNSS, APNSS, DASS2, Q.931 (primary and basic rate), R2, and QSIG.

### SIP/IP Gateways from the HG3500-DX family

HG3500-DX is a family of integrated IP Gateways for seamless migration to an IP infrastructure.

The HG3500-DX Gateway family offers:

- SIP Trunking (HG3540/50-DX)
- IP Trunking (HG3550-DX and HG3540/50-DX)
- Connection of desktop IP clients (HG3530-DX)
- Voice compression (G.723, G.729)
- Payload switching/direct media connections
- QoS in accordance with IEEE 802.1p/q VLAN tagging) and DiffServ (IETF RFC 2474)
- QDC support (QoS Data Collection)

### HG3540/50-DX SIP/IP Trunking for HiPath DX

HG3540/50-DX provides SIP Trunking or H.323-based IP Trunking for HiPath DX. As an integrated gateway it enables HiPath DX to interwork with HiPath 8000 via SIP Trunking. It also enables two or more HiPath DX, HiPath DXR or HiPath 4000 systems to be networked cost-effectively via SIP Trunking or via IP Trunking while retaining the full set of networking features

The straightforward scalability of the HG3540/50-DX SIP Trunking or IP Trunking solution (up to 90 channels per HG3540/50-DX) means that this solution can be customized in line with individual corporate requirements and locations.

HiPath HG3540/50-DX drastically reduces network operating costs. A circuit-based dedicated private network may be replaced with an IP based network so that voice traffic is converged with data traffic over the IP network.

### HG3550-DX IP Trunking for HiPath DX

HG3550-DX provides H.323-based IP Trunking for HiPath DX. As an integrated gateway it enables two or more HiPath

DX, HiPath DXR or HiPath 4000 systems to be networked cost-effectively over IP while retaining the full set of networking features.

The straightforward scalability of the HG3550-DX IP Trunking solution (up to 90 channels per HG3550-DX) means that this solution can be customized in line with individual corporate requirements and locations.

HG3550-DX drastically reduces network operating costs. A circuit-based dedicated private network may be replaced with an IP based network so that voice traffic is converged with data traffic over the IP network.

### HG3530-DX desktop IP

HG3530-DX provides support for Desktop IP clients. The following clients are supported:

- optiPoint 410
- optiPoint 420
- optiClient 130
- AP1120 – supporting fax and modem devices

HG3530-DX features a 10/100 Base-T IP network interface. It supports overbooking for up to 240 IP clients and is available in two variants (60 or 120 simultaneous connections).

### Payload switching

Connections between IP end points (IP clients or IP Gateways) are switched directly in the IP network. Voice data can be switched here without an audible delay. Consequently, the bandwidth of the available IP network can be optimally exploited.

## Desktop solutions

### optiPoint 410 and 420

The optiPoint 410 and 420 comprise a comprehensive range of IP Telephones all IP standards based, supporting message waiting indication, wall mountable, local or LAN powered.



The range of 420 phones offer the same functionality as their counterparts in the 410 range, with the added benefit of self-labelling key strips that mean no

need for paper labels, meaning quicker installations, lower operational costs and improved productivity.

Every optiPoint telephone in the 410 and 420 family satisfies all the requirements of VoIP telephony. All models support Computer Telephony Integration (CTI).

Telephones are connected to HiPath DX via the integrated HG3530-DX Gateway. In this scenario, telephones in the optiPoint 410 and 420 family operate like an optiPoint 500 and all HiPath DX features are available at the telephone.

A range of accessories and adapters are available to further improve usability or productivity. These include head-set options, recorder adapters, key modules, supervisor packs and busy lamp fields.

For further information on optiPoint 410 or 420 refer to the relevant Datasheet.

### optiClient 130

optiClient 130 provides integrated telephone functionality as a screen-based application on a PC or notebook. optiClient 130 provides a visual representation of the status status of communications whether this is a direct call or 3<sup>rd</sup> party feature. The keypad can be customised to include additional programmable function keys such as consultation, call pickup or call park.



While on the move, optiClient 130 V5.0 also allows users to connect to corporate directories and personal call lists via LDAP. The modern and intuitive user interface makes optiClient 130 V5.0 the constant companion for clients who want to receive and make calls outside of their office environment.

The connection to HiPath DX is implemented over the integrated HiPath HG3530-DX Gateway. optiClient 130 is a PC based client and is the ideal software solution for all mobile users who want access to optiPoint office phone features

For more information on optiPoint 130 refer to the relevant Datasheet.

### optiPoint 500

The comprehensive optiPoint 500 range of digital workpoints are fully supported on HiPath DX. These workpoints provide the functionality and stylish design demanded by today's business environments.

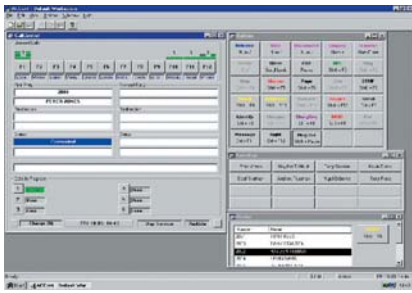


Computer based training is provided with every optiPoint 500 ensuring improved productivity. The unique modularity continues to provide a cost-effective route to additional desktop functionality.

For further information on optiPoint 500 refer to the relevant Datasheet.

### Attendant console

The Operator Console is often the first point of contact for customers of your business. It is therefore essential that the Operator Console is efficient, reliable, flexible and user-friendly to ensure a swift and efficient service for your customers.



The HiPath DX Attendant Console for Windows (AC-Win) fulfils all these requirements and more. The graphical user interface provides instant visual information on the state and identity of calls in progress and those held in queues. Operators can select their own screen layout, colour scheme and can choose between keyboard and mouse operation.

The directory package enables dial by name and more sophisticated searches such as all contacts for a particular product. Operators have full control over the fields they wish to view in the directory window. The supervisor application provides password protected administration functions such as database creation and the modification and import / export of data.

The HiPath DX AC-Win console is a PC based application, incorporating a powerful, integrated directory that can accommodate up to 250,000 entries. The screen-based nature of the product enhances user ease, and facilitates even faster processing of inbound and outbound calls.

## Mobility applications

### Cordless working

HiPath DX supports cordless solutions that can meet a wide range of customer requirements. Essentially, two options are available - DECT and Voice over Wireless LAN solutions (VoWLAN).

DECT (Digital Enhanced Cordless Telecommunications) is a global standard for digital portable phones. DECT has advanced performance in terms of speech quality and range, and includes encryption for maximum call security and optimised radio transmission for maximum battery life. There are essentially two types of DECT phones: those that connect via a base-station to HiPath DX (Gigaset range) and those that connect to a standard analogue single line extensions (Diverse range).

Voice over WLAN is a convergence technology – just as IP Telephony is providing benefits at the desktop, VoWLAN makes it possible to start bringing advanced, converged applications to users wherever they are.



HiPath DX Wireless delivers the voice quality, reliability and features to allow workers to communicate from anywhere in the enterprise.

optiPoint WL2 professional and optiPoint WL2 professional S are Wireless LAN Voice over IP telephones with colour graphical displays, supporting familiar telephone features such as polyphonic ringer tones and access to the rich enterprise telephony features of HiPath DX.

### IP mobile working

With ever increasing demands on businesses to reduce costs whilst enhancing productivity, many companies are looking to mobile working solutions such as desk sharing and home-working.

Siemens HiPath platforms, in combination with integrated IP Gateways, provide simultaneous voice and data communication via high-speed

broadband or dial-up connections for remote access to the company LAN. The mobile worker can use OptiClient 130 IP clients to access voice and data networks in the same way.

In addition, flexibility in the workplace is an increasing requirement for many users. With the HiPath DX hot-desking solution, users can log-on at any designated hot-desk telephone anywhere in the corporate network, then make and receive calls as if sitting at their own office desk.

## Voicemail and presence solutions

Whether you are looking to replace your existing Voicemail system, seeking an upgrade for increased scalability, flexibility or thinking about introducing Unified Messaging or presence applications into your Enterprise Siemens has the answer.

### HiPath Xpressions

A powerful voice messaging and auto attendant solution for all HiPath platforms including HiPath DX. Depending on your business requirements, HiPath Xpressions meets both your current voice messaging and future data integration requirements, providing users with the additional benefits of Unified Messaging and Xpressions Hotdesk at any time.



Unified Messaging enables improved productivity through the integration of E-Mail, voice, fax and SMS into a single application. Allowing increased collaboration and mobility through interworking of communication media.

Xpressions supports up to 5000 users on a single server with a disk capacity of up to 2000 hours. Xpressions supports web based administration – a user friendly interface for fast configuration.

## Improving customer contact

HiPath DX supports a variety of solutions to improve customer care. These range from integrated ACD functionality through to complex contact centre solutions. In addition, Siemens can supply a variety of peripheral 'add-ons' to HiPath DX such as Wallboards, Call Recording Software, Recorded Announcement devices (RADs) and Music On Hold systems – for further details contact your Account Manager.

### Customer contact centres/ACD

HiPath DX provides an integrated Automatic Call Distribution (ACD) system offering an extensive range of call queuing, agent and supervisory features. Utilising the HiPath DX networking capability, this functionality can be spread across large, dispersed organisational infrastructures.

The flexibility of the HiPath DX ACD allows customers to extend ACD operation to mobile, hot-desking employees, or across the PSTN to home-workers. These developments reflect the changing work patterns that exist in modern businesses, and the ability of HiPath DX to meet these new challenges.

### HiPath ProCenter



For the larger more complex customer contact centre, Siemens have industry recognised teams that deliver solutions. HiPath ProCenter offers a complete portfolio of customer contact centre products that are either generic or bespoke to individual customer requirements. A main objective of HiPath ProCenter is to simplify customer call centre design, purchase and implementation for customers, through strategic and tactical consultancy wherever required.

### Computer telephony integration

HiPath DX supports a variety of application programming interfaces to enable computer telephony integration.

The majority of the desktop telephones are designed to support Microsoft TAPI, whilst the CTI gateway supports Telelink and IBM CallPath. Such connectivity

enables valuable features including screen popping, whereby information relating to inbound callers is automatically displayed on an agents screen as incoming calls are detected.

HiPath DX can also provide CTI trunk monitoring, providing direct support for the control of individual voice channels within primary rate interfaces, and call control for skills based routing.

## System management

### Call logging

Ringmaster from Soft-ex and Tiger 2020 from Tiger systems provide sophisticated PC based GUI screen call management system for single sites or corporate networks.

They provide information and reports on all call activities as well as highlighting the possible need for additional staff training.

### DX Web Professional (DX WebPro)

DX Professional is a simple to use PC program with a GUI (graphical user interface) screen which offers easy management of a single DX system or a complete network over the web.

DX WebPro enables simplified management of moves and changes, fast access to system information and supports multiple clients simultaneously.

This means cost savings – less man-hours devoted to MAC tasks and reduced training and travel costs. In addition, it offers faster service – it enables immediate response to user demands with greater accuracy and improved fault management.

### HiPath QoS data collection

The HG3500-DX IP Gateways support HiPath QoS data collection. This means that static data (for example, jitter, delay, packet loss, buffer overflows/underflows, threshold violations) is sent to a central unit (QCU – QoS data collection unit). This data can then be used to quickly and efficiently analyze any IP network problems that may occur.

### Deployment Service (DLS)

Deployment Service (DLS) is a tool used to speed up the installation and configuration of large numbers of IP workpoints. The integration of the Deployment Service enables Siemens (or the customer) to easily and quickly deploy new IP phones.

It enables self administration of the inventory of the complete telephone infrastructure. Extra terminals can easily

be added or telephones re-located within the network thus ensuring the IP deployment is easy to manage and maintain (note this may require the provision of additional software licenses).

This means that there is no need to go to the expense of having on-site installation carried out by an engineer for ongoing 'Moves and changes' thus realizing the full benefit of the flexibility of IP. DLS is fully integrated with DX Web Professional for the capture of existing IP configurations.

### Application packs

HiPath DX Version 9.2 software is based on HiPath DX Version 9 software. All application packs offered as additional cost options at Revision 8 and Version 9 (excluding additional peripheral hardware and software) are included as standard at Version 9.2.

### Upgrading to HiPath DX version 9.2 from iSDX and Realitis DX

HiPath DX brings the DX firmly into the HiPath family, allowing it to access a range of new workpoints, common connectivity between other HiPath platforms and common applications. It future proofs HiPath DX by offering fully integrated IP based business communications. It continues the evolution ethos, allowing for the introduction of IP, mobile and presence applications when you are ready.

Conversion of iSDX and Realitis systems requires both hardware and software upgrades. Some applications may also need to be upgraded to ensure compatibility.

Please contact your Account Manager for more information.

## Technical data

### System dimensions (fig.1)

This applies to new systems.

fig.1:	HiPath DX	HiPath DXR
<b>Dimensions:</b>	Floor standing only: H 1800mm (max per stack) x W 750mm x D 625mm Maximum Of 3 stacks	19" rack mounting: H 178mm (4U) x W 450mm x 600mm per unit – max 4 units Patch panels: H 44.45mm (1U) each Max = 22U
<b>Weight</b>	196kg max per stack	18.5kg per unit
<b>Power</b>	230 V 50Hz AC or 48V DC	230V 50Hz AC (max 10A)
<b>Power cabinet</b>	H 1800mm x W 750mm x D 580mm – max weight = 750 kg	N/A
<b>Normal operating environment</b>	+5°C to +35°C, 10% to 85% relative humidity	+5°C to +35°C, 10% to 85% relative humidity
<b>Processor</b>	Single or dual, proprietary	Single, proprietary
<b>MTBF (complete loss of service)</b>	7.35 years (single processor) 59 years (dual processor with 4 hour mean time to repair)	4.83 years
<b>MTBF (module failure)</b>	13.66 years (single processor) 22.8 years (dual processor)	N/A

### Configuration capacities (fig.2)

This applies to new systems or HiPath DX systems that are upgraded to version 9.2 software. There will be some restrictions on older systems.

fig.2:	HiPath DX	HiPath DXR
Total number of extension ports	4064	960
Max analogue extensions	4064	480
Max digital (TDM) extensions Phone types: optiPoint 4xx range, optiPoint, Realitis digital telephones, ISDN (Q.931) phones	4064	960
Max IP phones Phone types: optiPoint 4xx range, optiClient 130, AP1120 analogue adaptor	4064	960
Total number of trunks	2048	1800
Max analogue trunks PSTN trunk types: EC, LCD, LCG, LCS, EDDI, SCDC IPBX trunk types: DC10, L/D, AC13, AC15, DC5, E&M	1800	88
Max digital (TDM) trunks PSTN trunk types: DASS2, Q.931 (primary/basic rate) PBX networking: DPNSS, QSIG, Tetra, Cornet-NQ, CorNet-N, R2/N2	2048	1800
Max SIP/IP trunks Signalling protocols on SIP trunks: SIP-Q or "native" SIP Signalling protocols on IP trunks: CorNet-IP	2048	1260
Max number of Operator consoles/AC-Win	22	22
Max number of ACD queues	255	255
Max number of ACD Agent Groups	255	255
Max number of Agents per Agent Group	255	255
Max number of CTI monitors (extensions/trunks) CTI interface protocol: CSTA I (CSTA III available via CAP)	2000	2000
Traffic capacity		
Max busy hour call attempts (BHCA)	25,000	8,000
BHCA for CTI enabled devices	15,000	8,000
Maximum switched traffic	905 Erlangs	200 Erlangs

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