Xtend IVR
Handbook

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What is Xtend IVR?

Xtend IVR is a Rapid Application Development toolkit for implementing Interactive Voice Response Systems quickly and easily. Any Computerised Telephony Integration solution can be implemented with reduced cost, time and complexity using the toolkit.

Version 3.0 builds upon the ease of use and flexibility of the previous versions while incorporating powerful new features like support for the .Net Framework, scalable architecture, speech recognition, background play, real-time mixing and voice streaming capability.

Every software release is extensively tested with each port individually handling over 10,000 calls to ensure that the runtime is stable and performs well even under the most demanding conditions.

Other features include database integration via ODBC or ADO, support for multiple lines and scalable architecture, text to speech and speech recognition, multi-language prompts, number to speech in Indian English, Hindi, Malayalam and support for Internet protocols. The Developer edition of Xtend IVR is available in the enclosed CD or can be downloaded from our website, www.xtendtech.com/ivr

Developer Edition

Developer Edition contains the development environment and a single port runtime and is used to develop and demo an IVR solution. However, the developer edition runtime should not be used in final production implementations of IVR solutions. The runtime is full-fledged, supports one telephone line, and is not technically limited in anyway. However restrictions on customising the 'About' box information and the main window bitmap are present.

Standard Edition

Standard Edition contains the development environment and the runtime capable of supporting the licensed number of ports. The standard edition is used for development and final production implementations of IVR solutions. The standard edition runtime allows complete customisability of the about box information and the main window bitmap as per user requirements. Licensing is enforced via a USB dongle.

Installing Xtend IVR

The Developer Edition of Xtend IVR can be installed by running the setup program '**xivr300-dev.exe**'.

To install the Standard Edition, run '**xivr300.exe**'. The exact installation processes is depicted below and is identical for both editions.
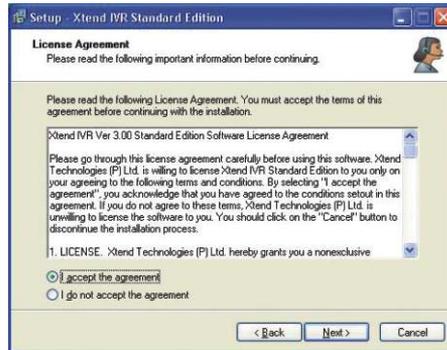
Installation procedure starts with this screen. You can click '**Next**' to continue or '**Cancel**' to exit the setup procedure.

License Agreement

Destination
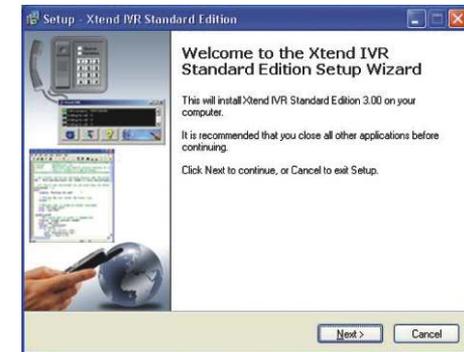
Please go through the license agreement carefully before using this software.

Xtend Technologies is willing to license Xtend IVR Developer / Standard Edition to you only on your agreeing to the terms and conditions by selecting the '**I accept the agreement**' and clicking on the '**Next**' button.

The default installation path of Xtend IVR is '**c:\xivr**'. But, you may use the '**Browse**' button to specify a different location.

To complete the setup program you need at least 80 MB free disk space on your system.

Start Menu Folder

Here, you can specify where the setup should place the program shortcuts. By default, you will find it in the Start Menu folder as '**Xtend IVR 3.00**'. Click the '**Browse**' button to create or specify another destination.

Completion

Once the installation is underway, it will add components such as IVR runtime, Developer runtime, HASP drivers, COM components, Editor executables, plugins, WAV files, IVR voice drivers, samples and documentation to your system.

This process may take some time. Please wait until all components of Xtend IVR are installed properly on your computer. On accomplishing setup, click '**Finish**' to conclude the installation.
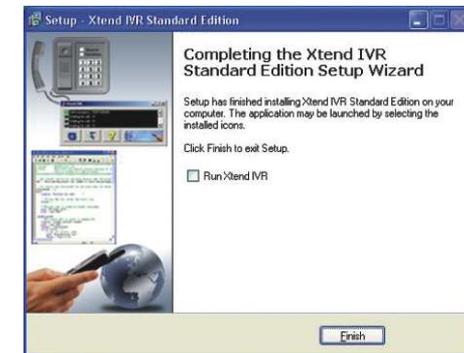
Now plug-in the HASP HL key into a USB port of your system.

Using the Development Environment

Load the application by selecting '**Xtend IVR Development Environment**' from the Start menu program group. If you prefer, the application can be launched by selecting the desktop icon.

You will find a message box with version number and release date. Click '**OK**'. The Development Environment offers a simulated phone so that developers can create, test and debug the script quickly and easily.

Running the First Script

'**Bank.dt**' is the default script loaded when you run the developer edition for the first time. To execute the script, click on the handset of the simulated phone displayed on your desktop. The IVR greets and prompts the user. The user can punch in the account number and PIN through the telephone keypad. The IVR verifies the PIN, retrieves the balance amount from the database and plays it back to the caller before terminating the call.

Please find below sample account numbers and PINs for the demo.

| AccNo	PIN	Balance
1111	1234	25000
2222	2345	32000
3333	3456	10000
4444	4567	12000
5555	5678	32200
6666	6789	23456

Configuring Xtend IVR

The following steps provide an overview of how you can configure Xtend IVR with the Dialogic card. Exhaustive voice card specific installation manuals can be found on your Start menu program group or on our website.

Install the Telephony Card and its appropriate driver. Once Xtend IVR setup program is complete, pick out the '**Xtend IVR Configuration**' option from the Start menu program group.

Selecting Appropriate Driver

The maiden screen that pops up is depicted here. For Dialogic Card, choose the '**gc51 driver**' and click next. If a different voice device is in use, make sure that you have selected the appropriate driver from the list.
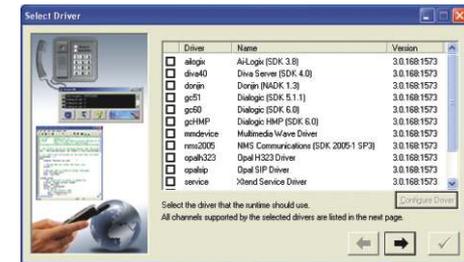
Selecting Channels

From the available list of channels, select the telephone channels that the runtime should use. Click '✔' to conclude the configuration section.

Using the Runtime

Now that we have completed the procedure for Xtend IVR, let's see how we can set up and run the Standard Edition. Load the application by clicking on the '**Xtend IVR**' icon on your desktop or from the Start menu program group.

All configured telephone lines will be listed in the main window of the Standard Edition. Xtend IVR is now ready to receive phone calls. As soon as an incoming call arrives at a telephone line, the line status will turn green.

Key Features

✍ **Built-in Scripting Language**

The power of Xtend IVR is in its scripting language, which is simple to learn, flexible, and easy to code. Coding complex telephony operations such as call transfer and speech recognition requires only a couple of lines of script.

✍ **Support for Multiple Voice Devices**

Xtend IVR is the only toolkit in the market with extensive support for multiple voice devices. Supported devices include all VoIP, Digital (E1/T1) and Analog devices from Dialogic (Diva Server), Dialogic (Global Call API), Pika (HMP & DSP), Ocha, Synway, Donjin, NMS, Ai-Logix, Sangoma and Telephony API. Please check our website for an updated list of all supported voice devices. Additional voice devices are being supported on an ongoing basis, depending on customer requests and device availability.

Disclaimer: All other trademarks are the property of their respective owners.

Key Features

✍ **Comprehensive Database Support**

Xtend IVR provides simple database functions to access SQL Server, DB2, Oracle, Sybase, Access and other standard databases via ADO and ODBC. In most cases, direct SQL statements can be inserted inside the script to obtain the required data. Advanced database functionality can be implemented by interfacing to any of the supported languages.

✍ **Extensive Language Integration**

The scripting language includes the ability to call functions written in VBScript, JavaScript and Perl script (Windows Scripting Host), functions written in C# or VB.Net (.Net Framework), and also the ability to call programs written in FoxPro, Clipper, Visual Basic, C, C++ and other legacy languages.

✍ **Exhaustive Examples**

Over 40 samples demonstrating the different capabilities and functionality of Xtend IVR are included in the Developer and Standard editions. Samples include telebanking, examination result announcement, calling web services, .Net integration, streaming voice channels and many more.

Key Features

✍ **Scalability and Multi-Port Capability**

Xtend IVR works right from a single port voice device to a 4000+ port T1/E1 solution with no changes in code. This means the developer can code for a single port IVR and deploy the same for a 4000+ port IVR simply by purchasing and installing the Xtend IVR Runtime. All multitasking and inherent inter-process complexities are automatically handled by the toolkit, leaving the developer free to concentrate on the application being deployed.

✍ **Support for TTS and Speech Recognition**

Xtend IVR supports all Speech API 4.x and 5.x compatible engines for Text-to-Speech. UT8 strings are supported for TTS, enabling support of foreign language speech engines. Further, all Speech API 5.x engines are supported for Speech Recognition. Other features include the ability to dynamically create and load multiple recognition grammars, and to perform speech cut-through on complete recognition of sentences, on recognition of the first word and in presence of speech.

Key Features

✎ Multi-language Prompts & Number-to-Speech

The scripting language is designed from the ground up for easy multi-language prompt support and enables the user to implement IVR support for multiple languages quickly. An innovative number-to-speech technology enables numbers, dates etc. to be spoken out in English, Hindi or Malayalam.

✎ Background Playback

Xtend IVR allows the playing of a Wave file in the background while simultaneously playing prompts, enabling one to incorporate background jingles or corporate tunes instantly into an IVR solution.

✎ Real-time Voice Streams

Voice streams from any full-duplex voice device can be streamed to any other voice device channel, thereby enabling soft interconnect of voice streams. This enables functionality such as the ability to snoop IVRS calls in real-time, stream IVRS conversations to a multimedia device, and conference channels with each other.

Key Features

✎ Voice Logging

Complete voice logs for any channel can be implemented via the insertion of a single voicelog command into the script. This is useful for maintaining raw voice records of IVRS usage for official purposes, or for debugging IVRS call flow.

✎ Background Threads

Xtend IVR provides support for general purpose ports to implement additional functionality not directly related (but playing a supporting role) to the IVR, such as polling a serial device every 10 seconds or retrieving mail every three minutes. These general purpose ports run the same scripting language, enabling one to quickly implement background tasks.

✎ Multimedia Streams

Support for multimedia devices for streaming audio to multiple channels is another feature. For example, the input of the soundcard mic can be taken and provided to all callers who dial into the system. Such an implementation could be used for providing a real-time radio/music channel service to callers.

Key Features

Fax Support

Xtend IVR supports the faxing of TIFF images or HTML pages, and the ability to implement fax-back systems or dial-back fax systems. It also supports colour faxing under specific cards. Fax support is available as a separate software pack that can be purchased independently.

SMS Support

The ability to send and receive SMS messages via a standard GSM modem is supported. Comprehensive support for Unicode text, long SMS and Flash messages are also offered. SMS support is available as a separate software pack that can be purchased independently.

Call Conferencing

A built-in facility to implement multi-party conferences using on-board resources helps to minimise CPU usage. Call conference support is available as a separate software pack that can be purchased independently.

Run-time Customisation

Xtend IVR has the capability to change the logo bitmap and also set the messages that appear in the window title and the 'about' dialog box, to facilitate easy developer customisation.

Key Features

Plugin Interfaces

A plugin interface is supported, which enables easy extensions to the scripting language. This permits implementation of additional functionality if such customisation is required. For example, in-built database functionality and SMTP/POP3 access are implemented as plugins.

Script Compiler

Xtend IVR supports compiled scripts, so that end-user modification of script files can be prevented. To prevent any sort of tampering, Xtend IVR scripts are tokenised, encrypted and check-summed.

Full-fledged Developer Edition

Unlike a conventional development environment, which requires the use of two phone lines to test and debug IVR prompts, the Xtend IVR Developer Edition simulates an incoming call via software. This allows IVR development to be done on any multimedia system. In fact, the developer edition is completely free to try. Xtend IVR developer edition is available in the enclosed CD or can be downloaded from http://www.xtendtech.com/ivr.

About Xtend

Xtend Technologies is a dynamic product development group specialising in the core technologies of embedded systems and telecommunications. The company's primary focus is in the development and implementation of innovative products and toolkits targeted at the growing telecommunication market.

Established in 1997, Xtend has quickly grown to include both software products and innovative embedded devices in its product portfolio and counts major government and private companies among its customer base. Its products have been used by prominent satellite channels, educational institutions, banks, telecom, and other private and public sector companies for dissemination of information to customers.

Xtend Interactive Voice Response (IVR) system is a rapid application development toolkit capable of building sophisticated telephone-based interactive systems quickly and easily. Supporting multiple voice cards, telecom standards and interfaces to programming languages, Xtend IVR focuses on bringing cutting-edge IVR solutions within the reach of the software development community.

Xtend Voice Logger is a multi-channel voice logging solution that works with audio channels, VoIP, or analog or digital (E1/T1) telephone lines. Sporting a browser interface, extensive reports, and support for standalone and PC-based solutions, Xtend Voice Logger provides a complete solution for any voice logging requirement.

Xtend Outbound Dialer (OBD) is a cost-effective computer-based application program with advanced features to deliver information to customers about various services, offers etc. Xtend OBD, also known as Outbound Dialer is an automated dialing system that dials a list of phone numbers in a group through multiple channels. Xtend OBD can be utilised as a powerful tele-marketing tool to promote various programs, advertisements, offers and value-added services to customers with reduced cost and time.

Xtend Technologies received the "**Best Innovative Products Award**" for Xtend IVR, Xtend SMS and Xtend FCT at IT Kerala 2000, a prestigious IT event held at Technopark, Trivandrum, in November 2000.

Our Products at a Glance

Xtend Voice Logger

Xtend Voice Logger is a multi-channel voice logging system that works with audio channels as well as analog, digital and VoIP telephone lines. Recorded interactions provide increased visibility into daily transactions over phone, helps to improve customer service and provides for an audit trail for compliance purposes.

Xtend OBD

Xtend OBD is a computer-based application program designed to automate the outbound calls for a value added services provider (VAS). The automated dialing system dials a list of phone numbers and tries to reach maximum number of customers with variety of campaigns.

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