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Evaluation: 8x8's Virtual Office Pro VoIP and Unified Communications Solution

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8x8, Inc.

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Executive Summary

In Q1 2011, Wainhouse Research (WR) conducted a third-party evaluation of 8x8's Virtual Office Pro, a hosted PBX / VoIP phone service / unified communications (UC) and web conferencing service offering.

This document provides the results of this evaluation project and focuses on the following aspects of Virtual Office Pro:

- Service activation and configuration
- Basic PBX functionality (e.g. auto attendant, extension dialing, ring groups, etc.)
- Basic user features and functionality (e.g. personalized voice mail, audio bridging, call transfers, online dashboard, internet faxing, call recording, advanced call forwarding, etc.)
- UC / additional communication features and functionality (e.g. web conferencing, video chat, integration with iPhone and Android platforms, integration with Outlook, etc.)
- System management capabilities (e.g. admin user interface, reporting, workflow, etc.)
- Overall user experience (e.g. audio, video, web, system UI, etc.)

During weeks of using the 8x8 solution for calls with colleagues and clients, the WR test team experienced ZERO call failures or audio issues. This is an amazing testament to the performance of this hosted VoIP / PBX offering.

To facilitate the evaluation, WR signed up as an 8x8 customer. To ensure that WR was treated the same as any other 8x8 customer, WR's order was processed under a fictitious company name. In addition, the WR team used the fictitious name during all interactions with the 8x8 team.

As a part of the evaluation, WR created five (5) user accounts on the 8x8 Virtual Office Pro system. For these five users, WR deployed eight (8) Polycom IP phones (provided by 8x8 as a part of our service package) across three (3) WR locations.

To assess the performance of the offering, WR used the IP phones and softphone clients for both test calls and day-to-day communication sessions with partners, peers, and clients.

Overall, WR was extremely pleased with the performance of the 8x8 offering. Specifically, we appreciated the wide range of PBX features (e.g. auto-attendant, ring groups, extension management, etc.) available to system administrators, the ease of use of the user portal, and the wide-band audio quality experienced during internal audio calls.

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PBX Primer

Videoconferencing and unified communications / UC may be the sexy buzz-words of the industry. However, the telephone remains the mainstay of communications today.

Traditionally, standard phone service has been provided by large phone companies (e.g. AT&T, Verizon, etc.). These companies leverage complicated and expensive phone switches to provide cost-effective, easy to use "dial tone" service to millions of homes and businesses around the world.

The concept of the private branch exchange (a.k.a. PBX) was born out of a desire for companies to cut telephone costs. Years ago, phone companies charged companies for not only long distance, but also local and regional phone calls. This meant that companies paid per-minute fees for phone calls between employees within the same town or even the same facility. The PBX allowed companies to cut their phone bills by keeping internal calls internal. In addition, the PBX offered a range of additional features such as centralized management, direct dial extensions, voice mail, etc. However, the PBXs of the time were too costly and complex for all but the largest organizations.

Over the years, PBX prices have dropped significantly. In fact, there are even free, public domain software-based PBXs available for download. In addition, the method of communication between the phones and the PBX itself has changed from analog to digital, to IP with proprietary signaling, to IP with standards-based (typically SIP) signaling. Furthermore, today's PBXs can leverage standard phone services (e.g. PRIs or analog lines) or SIP trunks provided by service providers. As a result, PBXs today are easier to purchase and deploy than ever before. However, despite vastly improved user interfaces, configuring and managing a physical on-site PBX typically requires IT-savvy resources familiar with basic telephony / communication technologies.

The IP-centric nature of today's PBXs has given rise to a new offering – the hosted IP PBX (a.k.a. IP Centrex solution or "PBX in the cloud"). Such offerings leverage centrally hosted servers and either the Internet or dedicated IP connections to provide enterprise PBX functionality via a Software as a Service (SaaS) model. The key benefit of a hosted IP PBX service, like 8x8's Virtual Office Pro, is that it frees the customer from the cost and burden of purchasing, maintaining, upgrading and managing a PBX and its connection(s) to a telephone service provider. Thanks to these hosted offerings, even the most advanced PBX / telephony functions are now within the reach of almost any sized organization – and without the need for an onsite PBX administrator to operate.

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The 8x8 Hosted PBX and Virtual Office Pro User Accounts

The 8x8 Virtual Office Pro (VO) offering is a hosted IP PBX service that provides advanced telephony capabilities to small, medium, and large enterprises. VO is compatible with standard SIP-based hardware and software devices, and customers can either bring their own IP phones (8x8 supports various IP phones) or purchase new IP phones from 8x8.

Virtual Office Pro includes the features / functionality listed in the table below. Please note that not every feature was tested as part of this evaluation.

Hosted VoIP PBX	User accounts
Auto attendant	Unlimited calling
Extension dialing	Direct phone number
Music / messaging on hold	E911 location management
Ring groups	Personalized voicemail
Conference bridge	Voicemail to email
Directory assistance listing	Wide-band ("HD") voice
Online administration	Caller ID with name
Local number porting	Caller ID blocking
	Call transfers
	Call park
	Call recording
	3-way calling
	Internet Fax (send and receive)
	Cloud storage of recordings / voice mail
	Advanced call forwarding
	Do not disturb
	Internal / external ring tones
	Stutter tone notification
	Local time display
	Phone-based management
	Online dashboard including softphone
	Online Meetings with content sharing
	Multi-party video chat
	Android and iPhone app
	Salesforce integration
	Outlook integration
	ACT! Integration
	Interaction with Facebook and Twitter

Figure 1: 8x8 Virtual Office Pro - Features / Functionality

8x8's Virtual Office Pro is sold on a per-extension basis (list price of US $49.99 per extension per month) including unlimited long distance calling within / to the US, Canada, France, Ireland, Italy, Spain, UK, and other countries.

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Test Environment and Methodology

As a part of the evaluation, WR created five (5) user accounts on the 8x8 Virtual Office Pro service and assigned a login to five (5) WR staff members.

WR then deployed the following eight (8) Polycom IP phones (provided by 8x8 as a part of our service package):

- 2 x Polycom SoundPoint IP 335
- 3 x Polycom SoundPoint IP 550
- 2 x Polycom SoundPoint IP 670
- 1 x Polycom SoundStation IP 6000

These eight (8) hardware phones were distributed across three WR facilities in Georgia, Florida, and Utah. Although not the subject of this evaluation, WR made a large number of calls using the Polycom VoIP phones listed above and appreciated their design, user interface, and especially the wide-band audio support.

In addition, the WR test team used the SIP soft client included as a part of the 8x8 service.

Local Area Network (LAN) Details

The hardware IP phones and the PCs running the 8x8 soft client were connected to the local area network (LAN) in each of the three WR locations. Each of the IP phones received an IP address via DHCP from our existing production routers, and no firewall / router configuration changes were made in order to accommodate the VoIP / video traffic.

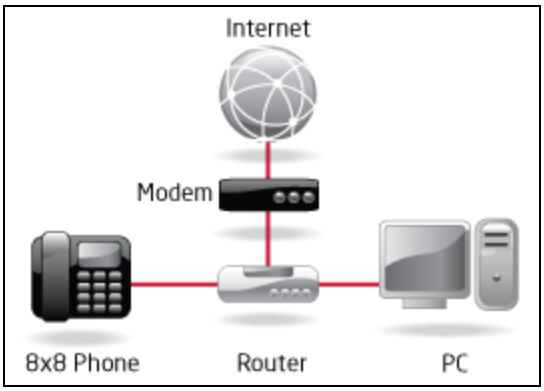

Figure 2: 8x8 Virtual Office Pro - Standard Setup

As a part of our service order, 8x8 included a D-Link DIR-655 QoS router intended to enable the prioritization of VoIP traffic across the LAN. According to 8x8, these devices are helpful when the LAN is heavily congested with non-real-time traffic (e.g. e-mail, web surfing, data transfers, etc.). To minimize the disruption at each site (which WR believes would be a high priority for a typical customer and also a factor in assessing customer satisfaction), WR's plan was to initiate the testing using the existing routers in each location and assess the call quality. If issues were noted, the QoS router would be installed in that particular location.

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WR is pleased to report that the test team did not experience sufficient call quality problems to warrant the installation of the QoS router.

Wide Area Network (WAN) Details

A key feature of IP PBX offerings like 8x8's Virtual Office Pro is the ability to transport the rich media (VoIP) traffic over existing broadband / Internet connections. This not only minimizes cost … it enables almost immediate activation and avoids disruptions at the customer site.

To assess the performance of the 8x8 solution in a typical customer environment, WR leveraged our existing broadband connections for this evaluation. The table below highlights the 8x8 setup in each WR location.

Site	IP Phones	Internet Connection
Atlanta, GA	Polycom SoundPoint IP 335 Polycom SoundPoint IP 550 Polycom SoundPoint IP 670 Polycom SoundStation IP 6000	Comcast consumer broadband service (4 Mbps up / 20 Mbps down)
Sarasota, FL	Polycom SoundPoint IP 335 Polycom SoundPoint IP 550	Verizon FiOS (25 Mbps up / down)
North Logan, UT	Polycom SoundPoint IP 550 Polycom SoundPoint IP 670	University Network (100 Mbps up / down)

Figure 3: 8x8 Virtual Office Pro - Setup at Three WR Locations

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System Training, Activation and Configuration

System Training

After signing up for the 8x8 VoIP service, WR was contacted by an 8x8 Technical Installation Lead (TIL) for administrator training. This training session took less than an hour and provided guidance on the use of the administrative portal and the user dashboard. The WR team lead then used this information to train the other members of the WR test team (a.k.a. 8x8 end-users) on the system. The ability to learn the administration of a PBX in less than an hour speaks both to effectiveness of the TIL's training session and the simplicity and intuitiveness of the system itself.

Service Activation / System Configuration

The activation of the 8x8 Virtual Office Pro service involved the following steps:

1) Activating the IP phones

Activating the hardware IP phones involved connecting each phone to LAN and then to power. Once the phone booted, the display on the phone asked the user to press a button to "Activate." After pressing that button, the system prompted the user to enter an activation code (provided by 8x8). The phone then completed the activation process itself and was ready to make and accept calls.

2) Creating the Virtual Office Pro user accounts

Virtual Office Pro user accounts are created within the "8x8 Customer Self Service Portal" (hereafter referred to as the "administrative portal"). This portal (described in detail below) allows for complete administration of the client's hosted PBX, the associated user accounts, and all company extensions / phone lines.

When a new user is created within the portal, the system provides the option to send the new user an email with a link and instructions for creating his/her user profile. Clicking the link within the email brings the new user to the menu highlighted in the screenshot below.

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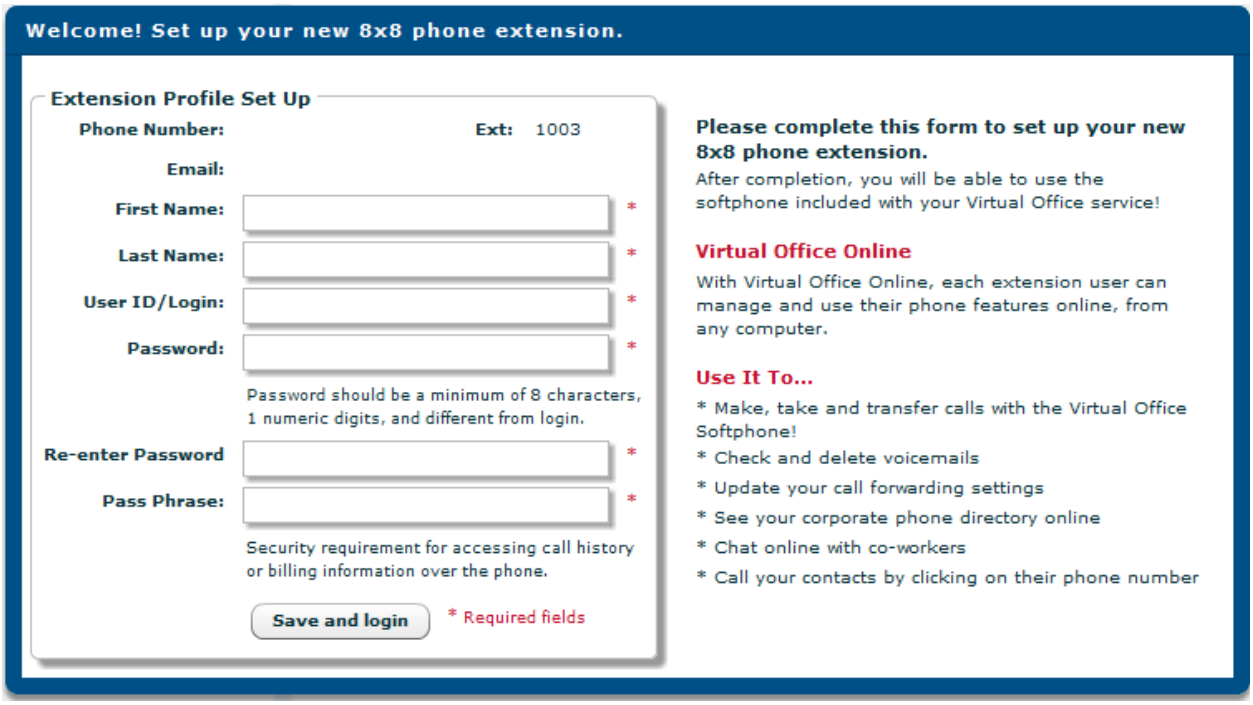

Figure 4: 8x8 Virtual Office Pro - User Profile Creation Menu

For those unfamiliar with PBXs, a single user account can be associated with one or multiple extensions. However, an extension cannot be associated with more than one user.

To facilitate the testing, WR used the portal to create five (5) user accounts and eight (8) extensions within the 8x8 system as shown in the table below.

User	Extension(s)
Team Member 1	1001
Team Member 2	1002
Team Member 3	1003 &1004
Team Member 4	1005 &1006
Team Member 5	1007 &1008

Figure 5: WR's User Accounts and Extensions

The screenshot below shows the administrators view of the features for a particular extension. Via this menu, the administrator can assign a particular extension to a particular user.

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iPBX Name:
Account Number:
Ext Phone Number:
Company Name:
Extension Number: 1003
Company Main Number:

< BACK
SAVE

Virtual Office Online User Profile

User Profile:
* First Name:
* Last Name:
* Email:
* Pass Phrase:
* User ID/Login:
* Password: ••••••••••
Confirm Password:

Caller ID Information

Caller ID First Name:
Caller ID Last Name:
Caller ID Number:
Caller Id Blocking:

Extension Details

Voicemail Password:
Voicemail Email:
*Voicemail Notification: Enabled with Audio
Time Zone: US/Eastern

EDIT E911 ADDRESS

Figure 6: 8x8 Virtual Office Pro - Extension Features Menu

One minor nit is that although the system allows administrators to update the enhanced 911 (E911) service address for each extension, it does not FORCE the administrator to update, or ask the user to confirm, these settings when an extension is activated.

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Evaluation / Test Results

The 8x8 VoIP Phone Service

After conducting dozens of formal test calls and using the hardware IP phones and softphones in the course of WR's daily workflow, the test team was pleased with the reliability and audio quality provided by the 8x8 service.

Throughout the test period, the call connectivity was flawless. None of the test members reported any calls dropping or cutting out.

When calling external parties, the team received absolutely no complaints about sound quality. Nobody appeared to notice that the team had switched to the 8x8 service - including people that the WR test team calls regularly from "landlines." In fact, one WR team member using an alternate VoIP service experienced echo issues during an analyst call. When he redialed into the same meeting using the 8x8 service, the call quality was perfect.

As a form of stress test, one member of the test team placed a number of external calls using his 4-year old home computer and the 8x8 soft client. Once again, no audio quality issues were noted.

For internal calls between 8x8 users - thanks to a combination of the 8x8 service and the Polycom IP phones in use - the test team enjoyed a wide-band "high definition" audio experience that far surpassed the quality of a standard phone call.

The 8x8 PBX Administrator Portal

As stated above, the 8x8 hosted PBX is administered via the "8x8 Customer Self Service Portal." While not designed for the casual end-user, WR believes that the admin portal is user-friendly and intuitive enough for its intended audience, the typical IT-literate system administrator.

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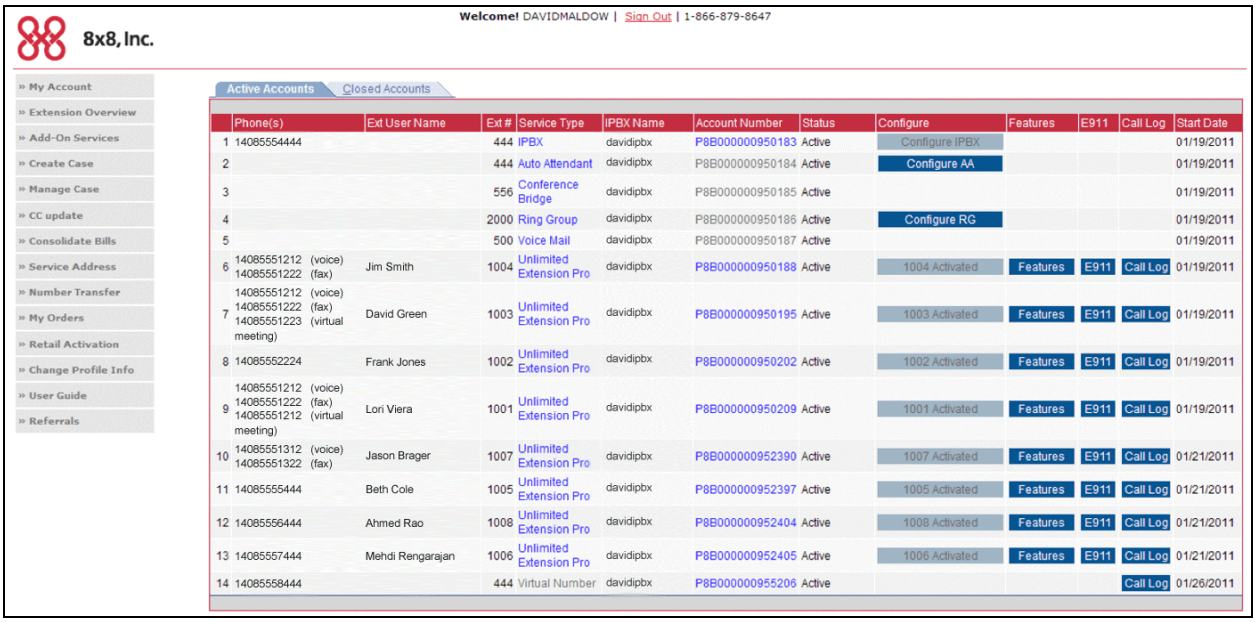

	Phone(s)	Ext User Name	Ext #	Service Type	IPBX Name	Account Number	Status	Configure	Features	E911	Call Log	Start Date
1	14085554444		444	IPBX	davidipbx	P8B000000950183	Active	Configure IPBX				01/19/2011
2			444	Auto Attendant	davidipbx	P8B000000950184	Active	Configure AA				01/19/2011
3			556	Conference Bridge	davidipbx	P8B000000950185	Active					01/19/2011
4			2000	Ring Group	davidipbx	P8B000000950186	Active	Configure RG				01/19/2011
5			500	Voice Mail	davidipbx	P8B000000950187	Active					01/19/2011
6	14085551212 (voice) 14085551222 (fax)	Jim Smith	1004	Unlimited Extension Pro	davidipbx	P8B000000950188	Active	1004 Activated	Features	E911	Call Log	01/19/2011
7	14085551212 (voice) 14085551222 (fax) 14085551223 (virtual meeting)	David Green	1003	Unlimited Extension Pro	davidipbx	P8B000000950195	Active	1003 Activated	Features	E911	Call Log	01/19/2011
8	14085552224	Frank Jones	1002	Unlimited Extension Pro	davidipbx	P8B000000950202	Active	1002 Activated	Features	E911	Call Log	01/19/2011
9	14085551212 (voice) 14085551222 (fax) 14085551212 (virtual meeting)	Lori Viera	1001	Unlimited Extension Pro	davidipbx	P8B000000950209	Active	1001 Activated	Features	E911	Call Log	01/19/2011
10	14085551312 (voice) 14085551322 (fax)	Jason Brager	1007	Unlimited Extension Pro	davidipbx	P8B000000952390	Active	1007 Activated	Features	E911	Call Log	01/21/2011
11	14085555444	Beth Cole	1005	Unlimited Extension Pro	davidipbx	P8B000000952397	Active	1005 Activated	Features	E911	Call Log	01/21/2011
12	14085556444	Ahmed Rao	1008	Unlimited Extension Pro	davidipbx	P8B000000952404	Active	1008 Activated	Features	E911	Call Log	01/21/2011
13	14085557444	Mehdi Rengarajan	1006	Unlimited Extension Pro	davidipbx	P8B000000952405	Active	1006 Activated	Features	E911	Call Log	01/21/2011
14	14085558444		444	Virtual Number	davidipbx	P8B000000955206	Active				Call Log	01/26/2011

Figure 7: 8x8 Virtual Office Pro - Administrative Portal

Auto Attendant

The PBX offers a highly configurable auto attendant with full interactive voice response (IVR) capability. Administrators can either record custom greetings via the phone or upload audio files in au, wav, vox or mp3 format. WR tested both greeting creation options and had no issues.

The system also supports the creation of multiple auto attendant profiles, and each profile can include different rules and options for business and non-business hours. For example, the system can be configured to provide one greeting at 3 PM and another at 8 PM.

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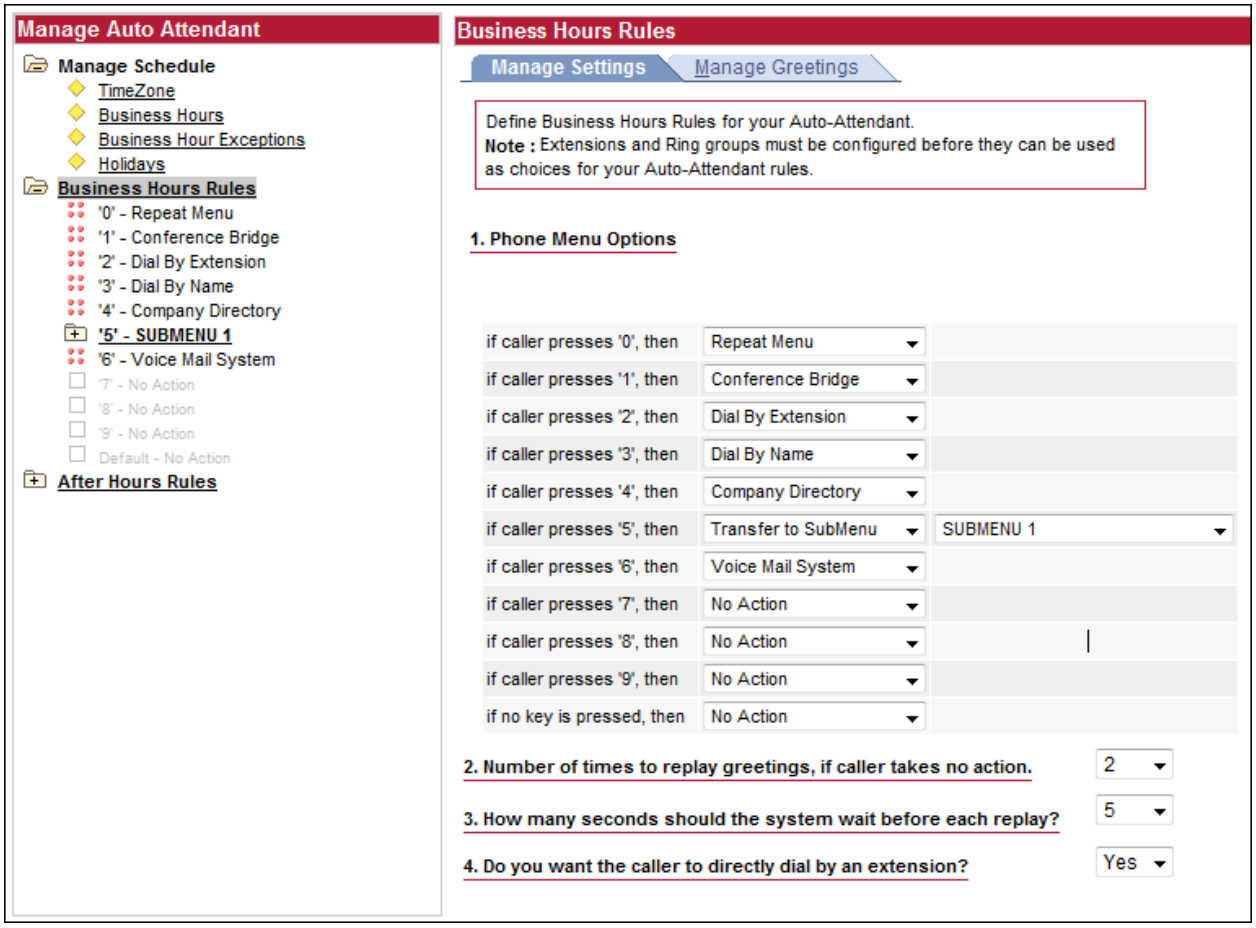

Figure 8: 8x8 Virtual Office Pro - Auto Attendant Menu

Those familiar with PBX management recognize that defining an auto-attendant menu is often complicated and time consuming. The 8x8 system, however, provides a series of pre-defined functions that can be assigned to each user key press. For example, with just a few clicks, the administrator can define that pressing the number 4 on the keypad routes the user to the company directory.

The pre-defined auto attendant options within the system include:

- Company Directory
- Conference Bridge
- Dial By Extension
- Dial By Name
- No Action
- Repeat Menu
- Transfer to Auto Attendant
- Transfer to Call Queue
- Transfer to Extension

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- Transfer to Ring Group
- Transfer to SubMenu
- Voice Mail System

The system also supports the creation of sub-menus, in effect expanding the number of choices available to the user. The ability to create submenus within submenus provides enough options to accommodate even extremely large enterprises or any sized organization with specific requirements (e.g. the need for menus in multiple languages).

Ring Groups

A ring group is a set of extensions that the PBX rings in the order defined by the system administrator. A ring group can be configured so that all included numbers ring simultaneously or in sequence. For example, a sales department ring group could be created such that all sales member phones ring simultaneously for 30 seconds, at which time the call is transferred to the receptionist. Properly defined ring groups decrease time to answer for callers and can help an organization more effectively utilize its resources.

Audio Bridging / Conferencing Capabilities

The 8x8 Virtual Office Pro service includes audio bridging capabilities for up to 20 participants per call. The service supports both pre-defined "standing" meeting rooms (often called meet-me audio bridging) and the creation of ad-hoc audio conferences.

To access an audio conference, users simply dial "556" from their IP phones or softphones. At this point, the caller can either:

- Press 1 to enter an existing, pre-defined audio conference. After pressing 1, the caller must enter the conference ID to join the meeting.

- Press 2 to request the creation of a new audio conference. After pressing 2, the caller must enter his voice mail password to verify his ID. Once completed, the system provides the user with the new conference ID via audio and via email. The user can then press 1 to enter the conference.

External callers can access an 8x8 hosted audio conference in four ways:

1) By dialing a direct, toll free or Virtual Extension number into the conference bridge and entering the access code (not tested by WR)
2) By calling the auto attendant and selecting a pre-defined menu option (e.g. press 5) to be routed to the audio bridge
3) By calling an internal user and being transferred to extension 556 (the audio bridge)
4) By having an internal user instruct the audio bridge to dial out to them directly

The user who creates a conference has access to a menu allowing him to list the people in the conference, remove people from the conference, or dial out to additional callers.

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Trouble / Issue Management

The 8x8 administration portal allows local administrators to create and manage trouble tickets (called “cases” in the system).

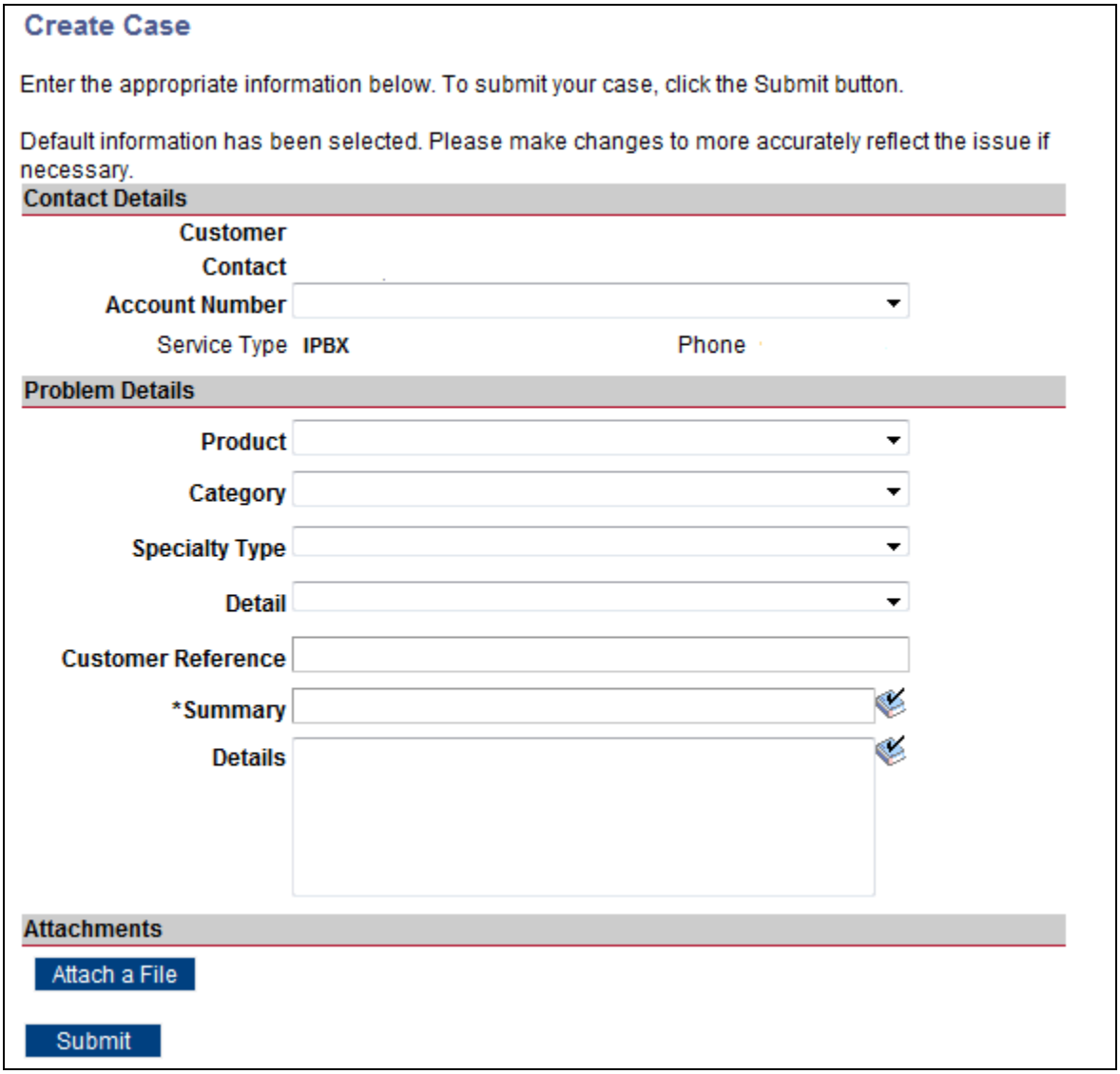

Figure 9: 8x8 Virtual Office Pro - Trouble Ticket Menu

Although this feature was not formally evaluated, WR believes that administrators for large enterprises may find this extremely helpful for tracking issues across a large deployment with hundreds of users distributed across numerous locations.

Reporting

The administrative portal provides easy access to call detail records / logs for each extension with the ability to filter by date range and export to an Excel file. However, these reports are provided on a per-extension rather than system-wide basis.

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Customize | Find | First 1-26 of 26 Last

	Caller	Callee	Direction	Begin Datetime	Duration
1	1678359159	1678240602	OUTBOUND	03/03/11 11:33:22	00:00:38
2	1678359159	1909259001 0	OUTBOUND	03/04/11 09:21:10	00:00:02
3	1678359159	1909259001 0	OUTBOUND	03/04/11 09:22:00	00:35:54
4	1678359159	1800518411 1	OUTBOUND	03/07/11 07:58:58	00:16:13
5	1678359159	1770408046 0	OUTBOUND	03/07/11 11:51:31	00:09:17
6	1404272851 4	1678359159	INBOUND	03/07/11 14:10:59	00:00:11
7	1678359159	1770408046 0	OUTBOUND	03/07/11 15:28:16	00:04:40
8	1678359159	1770408046 0	OUTBOUND	03/08/11 16:03:18	00:01:18
9	1678359159	1770408046 0	OUTBOUND	03/09/11 10:54:53	00:00:20
10	1678359159	1909972354	OUTBOUND	03/10/11 15:32:05	00:00:53
11	1678359159	1909972354	OUTBOUND	03/10/11 15:35:16	00:01:30
12	1678359159	1909972354	OUTBOUND	03/10/11 15:41:06	00:01:19
13	1678359159	1909972354	OUTBOUND	03/10/11 15:52:44	00:00:21
14	1678359159	1909972354	OUTBOUND	03/10/11 15:55:14	00:01:39
15	1678359159	1909972354	OUTBOUND	03/10/11 15:58:55	00:00:30
16	1678359159	1909972354	OUTBOUND	03/10/11 19:25:19	00:00:06
17	1678359159	1909972354	OUTBOUND	03/16/11 10:37:11	00:00:03
18	1678359159	1909972354	OUTBOUND	03/16/11 10:37:37	00:00:09
19	1678359159	1678240602	OUTBOUND	03/16/11 11:48:54	00:00:26
20	1909972354	1678359159	INBOUND	03/16/11 13:02:10	00:00:42
21	1909972354	1678359159	INBOUND	03/16/11 13:06:09	00:01:01
22	1678359159	1866079864 7	OUTBOUND	03/17/11 07:45:31	00:08:29
23	1678359159	1877463973 7	OUTBOUND	03/17/11 10:09:05	00:05:20
24	1678359159	1678240602	OUTBOUND	03/17/11 12:00:45	00:00:22
25	1678359159	1770408046 2	OUTBOUND	03/17/11 12:01:34	00:00:14
26	1678359159	1678240602	OUTBOUND	03/21/11 11:15:58	00:00:32

Figure 10: 8x8 Virtual Office Pro - Call Log

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The 8x8 User Portal

The 8x8 service includes a web-based user portal / online dashboard (called Virtual Office Online) which allows users to:

- Define / update system settings
  - Configure outgoing caller ID text (e.g. “John Smith” at 212-555-1212)
  - Configure voicemail
  - Configure call recordings
  - Configure advanced call forwarding rules
- Communicate using the 8x8 softphone
  - Place calls via a web-based softphone client
  - Send and receive faxes
  - Send and receive instant messages to / from other 8x8 users
  - Create / join a virtual meeting (including desktop sharing and video chat)
- Access Information
  - Contacts (corporate directory, personal contacts, recent contacts)
  - Meetings in progress
  - Usage tracking / logs
  - Call recordings
  - Incoming and outgoing voicemails, faxes, and IM messages

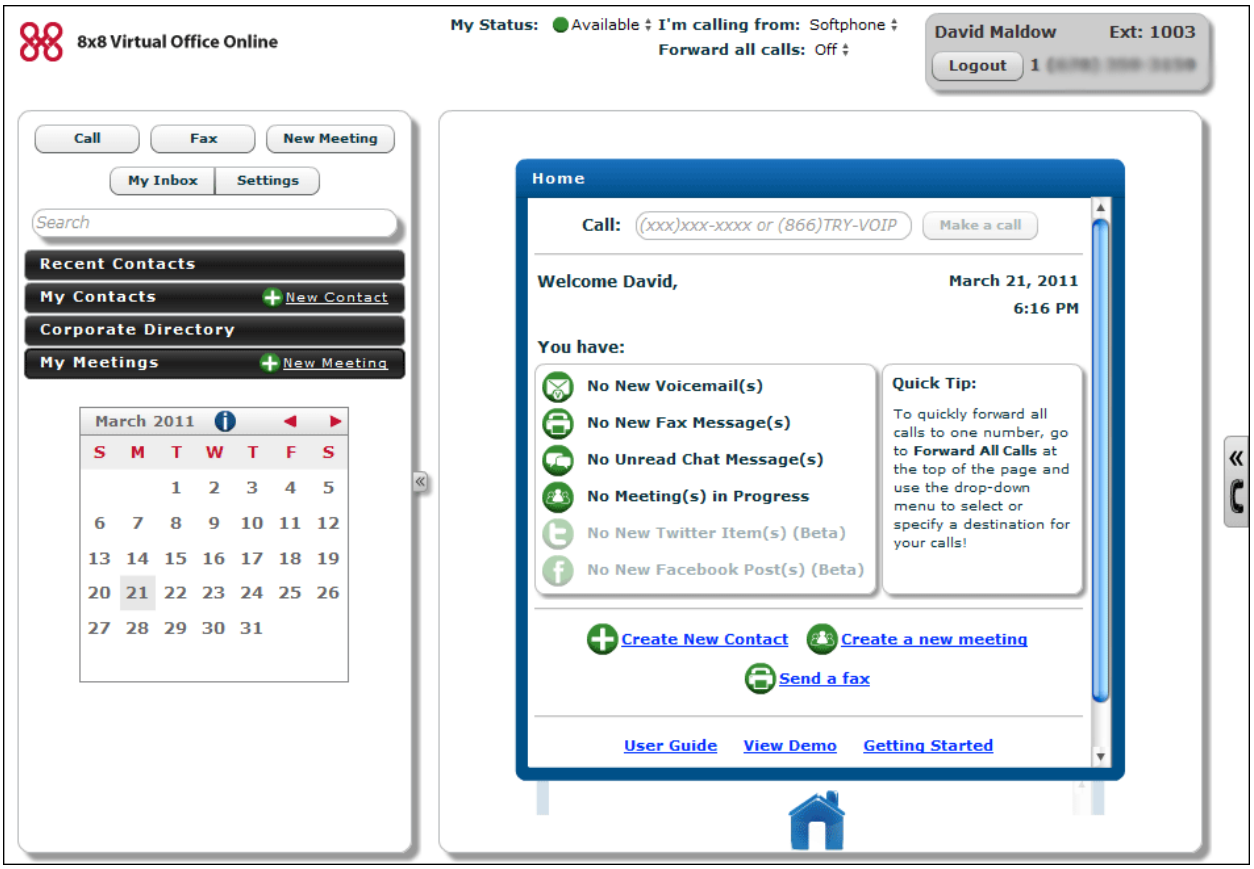

Figure 11: 8x8 Virtual Office Pro - Online Dashboard

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As described above, each user account can be associated with one or more extensions. When the user logs into the dashboard, he must select the specific extension he wishes to use / manage – including extensions already assigned to a physical IP phone (in which case calling that extension / number would ring both the physical IP phone and the soft client).

The 8x8 Softphone

The 8x8 softphone (PC version shown below) is intuitive and user friendly.

Placing Calls via the Softphone

Users have several options to place a call.

Option 1 – Entering a Number

To place a call, the user simply enters the number to call into the gray box above the onscreen dial pad. The user can type the numbers with his keyboard, dial each digit using the dial pad, or even cut-and-paste the number from another application. Once done, clicking the Call button places the call.

Option 2 – Calling a Contact (Directory / My Contact / Recent Contacts)

To place a call, the user simply selects the contact he wishes to call and the call is immediately launched.

Option 3 – Using Sent Items / Call History

To place a call, the user clicks the Call link next to the appropriate contact.

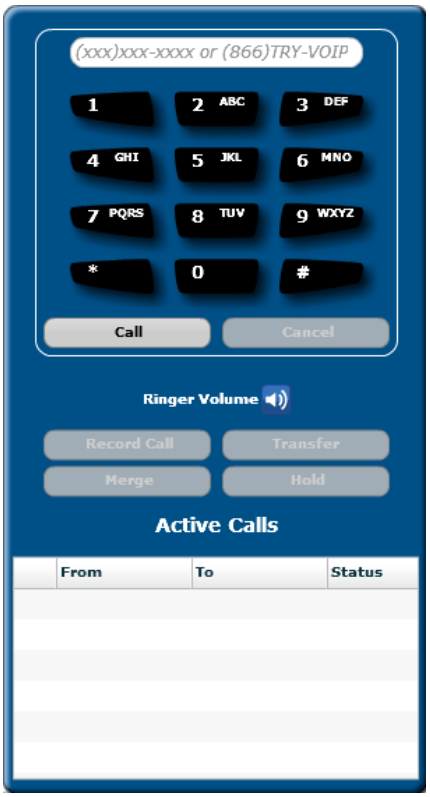

Figure 12: 8x8 Virtual Office Pro - Softphone

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8x8 has also released free Virtual Office Pro soft clients for use on iOS (iPhone, iPad, etc.) and Android devices. WR tested the iOS client on an iPhone 4 on the AT&T network, and the Android client on an EVO 4G on the Sprint network. In both cases the applications worked extremely well and allowed the WR tester to place / receive calls via his 8x8 extension. During the testing, the call quality ranged from good (in areas with strong cell phone data coverage or while connected via Wi-Fi) to "cell-phone like" with an occasional audio hiccup in other areas. In WR's experience, call quality varies widely with all smart phone VoIP clients (e.g. Google Talk). In other words, this is not specifically an 8x8 issue.

A key benefit of the 8x8 softphone (and softphones in general) is that calls placed from the PC or mobile device softphone client look the same to call recipients as calls placed from the physical IP phone. This power feature allows users to place and receive calls using their work phone even while working outside the office (e.g. at home, on the road). This eliminates the need to forward calls and allows the user to avoid using his cell or home phone for business calls.

Call Management

The 8x8 softphone client provides users with a range of call management features including placing a call on hold, transferring a call, recording a call, accessing a second line / instance of the extension, and merging calls on different lines (a.k.a. 3-way calling).

Sending and Receiving Faxes

The online portal / dashboard allows users to send faxes (with or without a custom cover page) by typing in the recipient's fax number and attaching a file of up to 19 MB. The system supports more than 25 file types including .doc, .pdf, and .jpg.

Virtual Office Pro users can also activate an additional phone number for incoming faxes, which can then be accessed via the inbox within the user portal / dashboard. WR tested the send and receive fax capabilities, and no issues were noted.

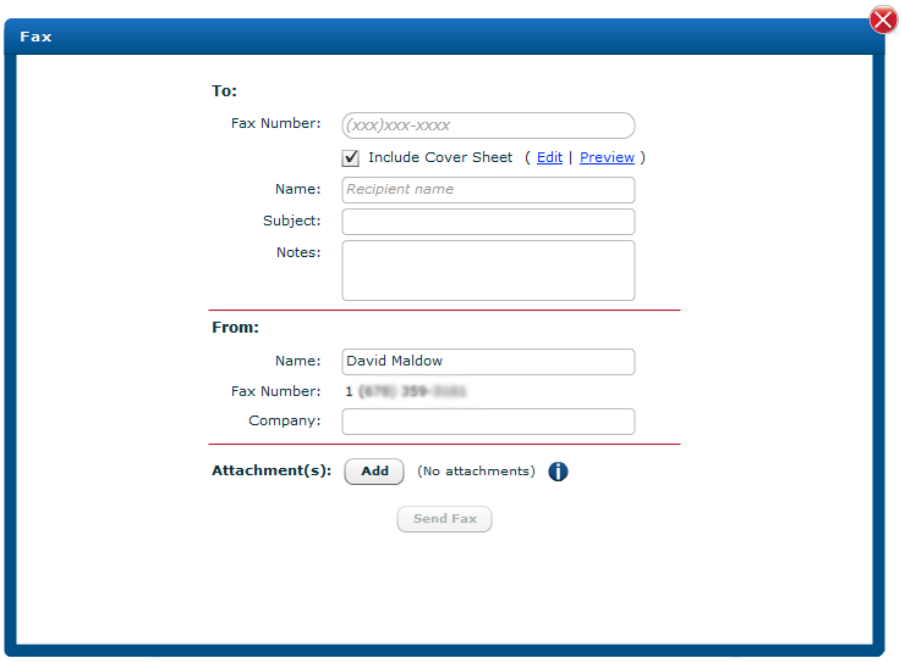

Figure 13: 8x8 Virtual Office Pro - Fax

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Virtual Meetings

Via the online / web dashboard, users can launch and join virtual meetings including up to 15 participants. 8x8 virtual meetings support audio (via telephone or PC headset using the soft client), text chat, content sharing, and video chat.

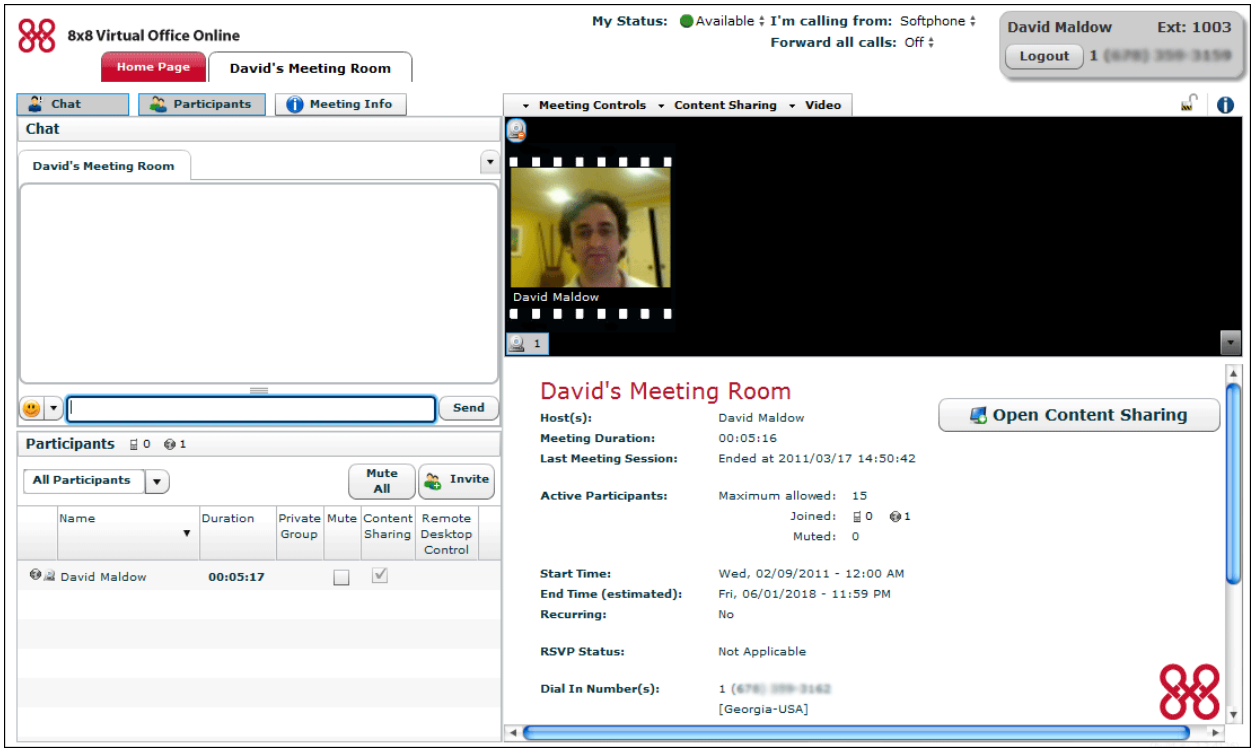

Figure 14: 8x8 Virtual Office Pro - Virtual Meeting

Internal (8x8) users access the virtual meeting via the My Meetings tab on the browser user interface. The virtual meeting workflow is intuitive enough that even a non-techie should be able to quickly join a meeting and make use of the various features. The system also allows internal users to include external users in virtual meetings by releasing email invitations.

Content Sharing – the content sharing / web conferencing engine allows 8x8 users to share their desktop with other 8x8 users and externals. Although not as robust as some dedicated web conferencing applications, the system provides the key features expected by today's business users including very high quality images, the ability to share either the desktop or a single application, and the ability to share only certain parts of the screen. For the most part, the content sharing system worked well during our testing, although we did experience a few Java-related issues that forced us to restart some sessions.

Video Chat performance – the video chat engine allows 8x8 users to conduct multipoint videoconferencing sessions with both internal and external users. Although highly functional with strong image quality and lip sync, the image sizes were relatively small compared to those offered by desktop videoconferencing solutions.

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Advanced Call Forwarding

WR was impressed by the flexibility of the call forwarding options within the online dashboard. Call forwarding is accomplished by the creation of rules, and each rule contains the following three components:

1) Call From – Users can specify whether a rule should apply to all incoming callers or only certain callers (based on incoming caller ID).
2) Date and Time – Users can specify when the rule should be in effect
3) Forward To – Users can specify that the call be forwarded to another extension or an external number (e.g. cell phone). Multiple forwarding numbers can be included, and the system can be directed to attempt to forward to each number in sequence. If none of the listed numbers / extensions pick up, the system can be directed to forward the call to the auto attendant, a ring group, or voicemail. Alternatively, the system can be directed to simply drop the call.

By clever (and careful) use of multiple rules, a user can set up an extremely effective call forwarding scenario. For example, a user can create the following:

Day / Time	**Rule**
8:00 AM to 11:00 AM	Top 5 clients forwarded directly to user's desk. All other calls forwarded to user's assistant.
11:00 AM to 1:00 PM	Top client and assistant forwarded to user's cell phone. Other important clients forwarded to user's assistant. All other calls sent to voicemail.
1:00 PM to 5:00 PM	Top 5 clients forwarded to user's assistant. All others forwarded to the auto attendant.
5:00 PM to 8:00 PM	Top client and assistant forwarded to user's home phone. All other calls forwarded to voicemail.
8:00 PM to 8:00 AM	All calls forwarded to auto attendant.
Weekends	Top client and assistant forwarded to user's cell phone. All other calls forwarded to the auto attendant.
All times	Blocked / anonymous callers sent to auto attendant.

Figure 15: 8x8 Virtual Office Pro - Sample Call Forwarding Rule Set

Although the typical user will probably not leverage this feature to this extent, WR appreciates these advanced call routing capabilities.

Additional Features

Virtual Office Pro supports a number of additional features including the ability to send instant messages to other Virtual Office Pro users, the ability to record phone calls, and the ability to customize one's Caller ID profile. In addition, the system supports the creation of multiple custom voicemail greeting messages (e.g. one for internal callers, one for external callers, one to be used during business hours only, etc.). WR tested all of these features and had no issues.

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The system also includes a basic presence engine. However, WR found it lacking because, a) it only provides presence (online and free/busy) information for users logged into the user portal, and b) the status information shown was not always accurate / up to date.

One noteworthy additional feature is that the system can send users an email notification when they receive a new voicemail or fax. The email notification for a voice mail includes a .wav file of the voice message and a link to call the person back via the 8x8 soft client. The email notification for a fax includes a link that opens a browser window displaying the fax.

System Integration

Microsoft Outlook

8x8 offers a free Outlook plug-in that allows 8x8 subscribers to place calls using Microsoft Outlook. To place a call, users simply, a) right click on a highlighted contact and select "8x8 Call Contact" from the drop down menu, or b) select the contact and click on the 8x8 Call button. At this point the user can select which number to dial (e.g. Business, Cell, etc.).

The 8x8 Outlook plug-in also identifies the caller (using caller ID), and if the caller exists in the user's Outlook contact list, automatically opens the caller's Outlook record on screen. If the caller does not exist in the Outlook contact list, the system prompts the user to create a new Outlook record.

Salesforce

8x8 offers a free Salesforce plug-in that leverages Salesforce's call center capabilities. Once installed (a 10 minute process for the user and a 5 minute process for the Salesforce administrator), Salesforce users can place 8x8 calls from within Salesforce by clicking on the telephone icon next to any contact. The user then has the option to automatically log the call within the contact record. The integration also provides an 8x8 phone dialing window within the Salesforce application.

WR tested both the Microsoft Outlook and Salesforce integration options and found them both user friendly and highly useful. The Outlook integration provides users with many common call center functions at a fraction of the cost. The Salesforce integration makes it easier for sales professionals to call their clients. Best of all – these capabilities are included free within the 8x8 service.

IM / Presence Services and UC platforms

Perhaps more a "nice to have" than requirement today is the ability to integrate with existing IM / presence services (e.g. AIM, MSN, and Yahoo) and UC platforms (e.g. Microsoft OCS / Lync). The fact that this type of hosted PBX solution is likely to be of greatest interest to SMBs makes this even more of an optional item. However, WR believes this will become a competitive requirement in the next few years.

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Offering Strengths

- Highly functional hosted PBX with wide range of basic and advanced features
- Powerful user portal / dashboard provides easy access to key telephony functions
- Support for PC and mobile device (iOS, Android) soft clients
- Very strong connectivity / reliability (WR never had a single failed call)
- Functions extremely well – even over the public Internet (no MPLS / QoS required)
- Exceptional wide-band audio quality for calls between 8x8 users / extensions
- Very good audio quality for standard phone calls
- Integrated audio conferencing engine supporting up to 20 participants
- Integrated web conferencing and video chat capability
- Strong help desk able to a wide range of questioned posed by the WR test team
- Useful (and FREE) integrations with Microsoft Outlook and Salesforce
- Relatively low cost (billed on a monthly, per-user basis)

Offering Weaknesses

- Lack of advanced UI features (right click, drag and drop, etc) within the system
- Limited help within the administrative portal and online dashboard
- Mediocre reliability within the web conferencing application and presence engine
- Reporting engine does not provide system-wide usage information

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Conclusion

The 8x8 Virtual Office Pro solution packs a massive array of features into a Software as a Service offering with a price point within reach of virtually any size organization. It is easy to install, easy to configure, and easy to use.

Given such a long list of functions and capabilities, it is easy to lose track of what really matters. When it comes to any telephony solution, and especially a VoIP solution --- there are two items that can make or break the deal … reliability and audio quality. If one or both of these are lacking, the service is basically unusable. Based on WR's extensive testing, the 8x8 solution performed like a champ. During several weeks of testing and using the 8x8 solution for calls with colleagues and clients, the WR test team experienced ZERO percent call failure and ZERO calls with poor audio. Considering the hyper-critical nature of WR's test team, this is an amazing testament to the performance of the 8x8 VoIP offering.

Unlimited, high quality (and even wide band for internal calls) VoIP audio is not the only benefit provided by the 8x8 package. The service also includes a hosted, highly configurable PBX that puts advanced telephony features in the hands of every 8x8 customer. The features range from basic (e.g. centralized voice mail and call forwarding) to advanced (e.g. a fully customizable auto attendant, ring groups, and free smart-phone clients). In addition, users enjoy access to a wide-band audio capable PC soft client and integrated multi-party audio, video, and web conferencing.

Whether your organization wishes to decrease (or control) telephony costs, improve audio quality, gain access to advanced telephony and collaboration tools, or provide the appearance of a large company to the outside world … based on WR's experience, the 8x8 Virtual Office Pro will not disappoint.

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About Wainhouse Research

Wainhouse Research, LLC (WR) provides analysis and consulting on the market trends, technologies/ products, vendors, applications, and services in the collaboration and conferencing fields. Areas of coverage include hardware, software, and services related to audio, video, and web conferencing, unified communications, and enterprise social networking. The Company publishes market intelligence reports, provides customized strategic and tactical consulting and studies, and produces industry events (conferences). Additionally, the Company operates industry-focused and end user-focused Web sites and publishes a weekly sponsored bulletin for news and analysis. For more information on Wainhouse Research, visit www.wainhouse.com.

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About 8x8

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8x8, Inc. (NASDAQ: EGHT) offers integrated voice, video and mobile unified communications solutions for small to medium-sized business and distributed enterprise customers. These solutions leverage existing broadband Internet connections and cellular networks to deliver advanced features and high definition (HD) voice service at a fraction of the cost of legacy alternatives.

The 8x8 Virtual Office solution, 8x8's flagship hosted PBX business phone service, eliminates the need for costly, on-premise business phone systems by delivering all telephony services over regular broadband Internet connections. This economical, easy-to-use alternative to traditional PBX systems or Centrex class services allows users anywhere in the world to be part of a virtual PBX that includes automated attendants, conference bridges, extension-to-extension dialing and ring groups, in addition to a rich variety of other business class features normally found on dedicated PBX equipment. 8x8 Virtual Office subscribers can further enhance their communications capabilities with a full suite of cloud-based, unified communications services bundled as 8x8 Virtual Office Pro. These services are accessible from a centralized web-based client and include Virtual Meeting web conferencing with video, Internet fax, call recording, mobile iPhone application, click to dial, presence management and more.

In addition to the Virtual Office Hosted PBX service, 8x8 offers Hosted Key System service for companies whose size or structure dictates the sharing of multiple phone lines, IP Trunking services for larger enterprises who wish to reap the cost benefits of VoIP phone service while retaining previously acquired on-premise equipment, and a hosted call center solution with advanced capabilities like skills-based routing and multi-media queuing.

8x8 is committed to providing innovative, high quality Internet communications services that offer enhanced functionality over traditional solutions at significantly less cost to the user. In addition to outstanding quality of service, 8x8 places a high value on the quality and effectiveness of its customer support organization and maintains established California-based call center operations.

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