

# ADVANCED KIOSKS -VOIP INTEGRATION SOLUTION FOR SMH

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## Preface

Screening for Mental Health (SMH) is a non-profit organization out of Wellesley, Massachusetts that provides a wide range of services aimed at lowering or removing the bars to access both acute and long term mental health and psychiatric services. Our partnership focuses on one of their initiatives, the MindKare Program, which aims to provide public access to discrete and confidential mental health screenings. It allows users to identify if they are at risk for or potentially suffering from a litany of psychiatric issues or substance abuse disorders, without needing to access a medical professional. Often people do not seek psychiatric services, for fears of being 'labelled'. The anonymity of the screening allows for a dialog to start, giving the users access to resources in their area. Most people are unaware of low or no cost resources near them, and this project aims to increase awareness, ease access to services, and lower the stigma associated with mental health issues.

## Customer Requirements

Due to the nature of these screenings, SMH wanted a means to allow someone to anonymously contact a local crisis center if they need acute or emergent services. The service had to be immediately obvious, using signaling that was as language-agnostic as possible. These requirements are what lead SMH to use Advanced Kiosks to provide the physical kiosks and lock down software, so these services could be may available even in unmonitored areas.

## Deployment

SMH currently has roughly 75 of our kiosks, primarily the countertop and freestanding variants. These kiosks have been deployed across the eastern seaboard, from Massachusetts, to Pennsylvania, to North Carolina. All of these kiosks are running Zamok 1.0, and most, if not all are running some form of the MindKare screening. The deployment environments vary, including medical facilities, schools and community centers. SMH often partners with other intermediaries for the deployment, such as VayaHealth to act as a liaison between SMH and the deployment sites.

## Solution

Advanced Kiosks provided SMH with a VoIP system that allowed users to access call centers through two different mechanisms. The first is a via call button in the navigation bar in the Zamok interface. When pressed, the VoIP button would show the user a contact to call (in these deployments it is only one number, their access to services line or call center). On pressing the contact, the user would be connected to a predetermined number via an integrated VoIP soft phone. This allows users to be presented access to a call center without exposing the number itself.

The second solution we created for SMH allows for a call to be placed via HTML scripting. Adding a simple line of code to any interactable element will allow a webpage to make a call using Zamok's integrated soft phone. This added functionality allows for a web designer to create attractive call to actions anywhere within their website, increasing user engagement.

## Technical Challenges and Lessons Learned

As of the time of writing, the major technical hurdles center around the quality of a location's internet access. As some of the screening sites are in rural locations, often with off-site IT teams, having a reliable internet connection can prove difficult. As the case in *any* always-connected service or software, the quality of the experience is directly related to the quality of the connection. This manifests in three reoccurring scenarios:

- 1) The kiosk is placed in an area with an inconsistent or poor Wi-Fi signal.

This is the most common issue; Kiosks that have been deployed in large lobbies or in tucked-away and discrete corners of a room often suffer from signal degradation due to either the distance from an AP or room geometry.

**Remedy:** It is best to be proactive during the site planning process. Once deployed (and often hard-mounted in a booth-type enclosure) our options become somewhat limited. Generally, this is resolved by picking a better, more reliable network **OR** placing the kiosk on a separate VLAN, ideally connected via an ethernet line.

2) The kiosk is connected to a guest network not designed for a long-term device.

These issues are less common, and more difficult to diagnose sometimes. Often the local Network or System Administrator will view the kiosk as a potential security ingress point, and subsequently put the kiosk on a guest or 'unclean' network. While a reasonable practice, this can lead to a few issues: channel crowding, low bandwidth, network restrictions, or low DHCP release times.

**Remedy:** Issues with signal crowding and bandwidth consumption is something that cannot be fully controlled, and is usually rectified by switching to a less crowded wireless network **OR** placing the kiosk on a separate VLAN, ideally connected via an ethernet line.

Issues with network restrictions and DHCP renewals occur because most guest networks are designed to service transient hosts. Low lease times prevent DHCP resolution pools from being exhausted, but can cause issues with long-term connections from renewing their IP addresses. Network restrictions are obviously in place to prevent public connections from posing a security risk, but can inhibit our services.

**Remedy:** DHCP issues can be solved by giving the kiosks a static IP address and granting the kiosk elevated privileges **OR** placing the kiosk on a separate VLAN, ideally connected via an ethernet line.

3) The network the kiosk is connected to has restrictions on the type of traffic allowed to pass through.

This issue is similar to the above issue on public networks, but can be due to filtering at a higher level on the network. The kiosks' traffic only requires a few ports to be open, which often does not present a risk to a network's security. There may also be some additional network settings that can cause issues with VoIP calling specifically, but those issues are known and well documented.

**Remedy:** Open the network to allow the kiosk's traffic and modify network settings to enable VoIP services. Some administrators will insist on not opening a whole network for one device, and will prefer to place the kiosk a DMZ. Since the kiosk does not transmit any confidential data, this is often acceptable to all parties.

*Please refer to the "Configuring Networks for Kiosks" technical documentation for further technical details.*

## Summary

The VoIP calling solution has enabled SMH to provide an additional layer of access to rural and/or underserved areas and populations. The calling solution gives access to care that otherwise would not be available to large swaths of people. In doing so, someone potentially having an acute crisis can call and talk to someone who is trained in de-escalation techniques, guiding them towards a path to treatment.

The solution we have provided is both robust and reliable, with the only hurdles being external issues involving the site's network settings and topography. With proper site planning and dialog, these issues are mitigated and we see kiosks with high availability and minimal downtime.