Cost effective and resilient enterprise wide user notification methods.
NetSupport School
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Introduction

Enterprises, both corporate and education, have an increasing demand for effective and reliable communication across their user base. With the corporate pressure for fast response times and turnaround and the increasing onus on educational establishments to provide effective and reliable communication to both their staff and students, attention is rapidly moving towards the wealth of communication and notification solutions available.

This white paper provides a high level overview of the scenarios and approaches available, as well as a summary of the functionality provided by NetSupport Notify.

Notification Alternatives

In a typical corporate environment, most one-to-many communications have an underlying dependency on existing communication tools such as email, pager solutions or internal telephone systems. More focussed communications can also be targeted via the use of instant messenger-type applications or SMS messaging. Within the education sector there continues to be an ongoing need for mass communication across a building or campus and again, typically, depending on the target audience (teachers or students) both electronic (email) and audible communication systems are utilised. There is an increasing obligation for schools in particular to have effective systems in place to deliver instant alarms or alerts when events regarding student and staff safety need to be communicated. With the increasing capabilities of modern mobile phones, not least the integration of cameras and the disruption from in-bound messages, many schools have adopted a no-use policy for mobiles within the classroom or campus.

Currently a number of solutions are available within the marketplace under the umbrella of mass notification solutions and each of these provides a specific method of delivering a single message to multiple recipients as quickly and efficiently as possible.
SMS

Many systems rely on the concept of delivering bulk SMS text messages to a predefined list of recipients. These systems are usually efficient and reliable but typically have a number of critical flaws, not least of which is the need for all target recipients to have an active mobile signal. In addition, these solutions carry a usage cost for delivery.

Email

Without doubt the most common means for delivering a bulk communication to a user base, email is readily available in almost all environments and is a no-cost solution. Once again, this approach has a key drawback, namely that the recipient needs to know a message has been received and have their email application open. In the case of critical security alerts, it has been proven that email does not deliver a sufficiently effective response time. One of the most common reasons for an organisation to need to notify its staff will be the lack of email or server availability and naturally this is not a particularly appropriate time to have email as the organisation's underlying notification solution.

Desktop Notification

This approach is application-based and in simplistic terms, provides a means for delivering a specific message to all active computer systems across a LAN (or in some cases a WAN). These solutions carry a natural benefit of being able to immediately capture user focus and remove the need for user interaction. Currently most desktop solutions are provided as a subscription-based service and as such, message delivery is sent by the individual to an online server which will then deliver the content to each of the pre-defined recipients. Again this approach, whilst valid, potentially provides point of failure (external internet connectivity and provider availability) as well as a cost for delivery overhead in many cases.

NetSupport Notify provides a similar approach but delivers all of the capabilities without the need for external services or support. The solution is designed to deliver instant alerts across both a LAN and WAN to both Windows and Mac computers without the need for network configuration and without any usage overhead.
Communications to all computers

Naturally, an effective desktop notification tool needs to provide the capability for a single message or alert to be delivered across an enterprise seamlessly and within seconds. At first level, this means a requirement for support of a local area network, and secondly to provide capabilities across a segmented network or WAN without the need for extensive network modifications. Most existing network topology for security reasons will prevent the delivery of broadcast packets across its routers to different network segments and more often than not, attached computer devices will have dynamic and changing network addresses on an ongoing basis.

To cater for all likely scenarios NetSupport Notify utilises a unique communication server, an application that is installed on a specified computer that handshakes communications between the message sender and all desktop computers. All desktop computers carry a notify agent and these hold details of each and every available communication server – this provides ample flexibility for in-built redundancy should a specific server become unavailable. As the basis for communication is the desktop computer registering itself with the communication server, its current network address information is always maintained and up to date. For a message to be delivered, a console user simply directs the message to the communication server, which handles the onward distribution. In addition, the communication transport supports HTTP and as such, recipient computers can be in separate networks, buildings, or if appropriate, counties.

Functionality

When an organisation needs to send a notification to its desktop users, the Notify console is used as a pre-installed application. This provides the input of the notification and its supporting information, the ability to set the visual priority for each notification, specify an audible alert to accompany the notification if required, as well as the behaviour of the notification on the user's desktop screen. Having constructed the notification, the console user can select to target the message to specific departments, or the entire user base.

On delivery of the notification, confirmation is provided to the console user of the total recipients and a log is kept on each computer recording both the time the notification was delivered and the time the user acknowledged receipt (both include current logged on user validation). As such, this removes the potential for claims of non-receipt and allows for ongoing administrative validation. NetSupport Notify is also provided with a sample web page and communication object so that the technology and functionality of the solution can be accessed directly via a web page, from the organisation's intranet, or from within an existing application.
Implementation

The NetSupport Notify solution is provided as a single executable set-up file as well as a matching MSI installer file. This contains each of the three required components for the given enterprise, namely the console, the notification server and the desktop agent. The application can be installed locally on a target PC, can be deployed using the pre-supplied deployment tool within NetSupport Notify across either a range of IP addresses or network domains. Finally, it can also be deployed via alternative methods utilising the MSI installer, such as Active Directory.

Security

The key to an effective notification system has to be ease and speed of use. An over-complicated yet powerful solution will be of little benefit if it requires extensive training or user input. Once implemented, an organisation will be keen to make sure only approved individuals have access to the creation and delivery of notifications. On installation of the communication server, the administrator can create unique security keys for their enterprise. These will control which agents are able to handshake with the server and also validate any inbound notifications that are submitted to it.

In addition, NetSupport Notify offers full support for Active Directory and includes a sample AD template for use. All of the configuration required for a desktop agent can be defined centrally as a policy and will automatically apply to all desktops on start-up. This approach removes the risk for unauthorised agents being added to the enterprise and allows for central management of configuration and options. This same approach can be used to control which computers or users have the ability to operate the console application, again on a central policy basis as an extra layer of security.

Conclusion

It is recognised that increasingly in education, as well as the corporate sector, the need for reliable and cost effective communication tools have never been more important. To provide a complete and redundant solution may well require the implementation of a number of complementary solutions. In environments where the majority of the workforce are assigned some form of IT resource, it is our belief that communicating direct to the desktop is the most reliable approach in assuring immediate user recognition and response.

Written by: A.Kingsley 02/2008 (updated 10/2009)
All of the features discussed in this whitepaper are provided as standard in NetSupport School.
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