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Application Note

Deploying Survivable Unified Communications Solutions with the Dialogic® 2000 Media Gateway Series

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Executive Summary

Communication is a mission-critical function for business and enterprise deployments, because loss of communications capabilities can result in decreased productivity, interruptions in service, and even lost revenues. As enterprises adopt Unified Communications (UC) solutions, it is imperative that these solutions keep employees reachable in the event of equipment failure or malfunction.

To maintain mission-critical communications, most enterprises deploy technology that addresses a wide range of potential disruptive situations, including out of service endpoints, proxies, and application servers; as well as network outages and power failures. This application note examines how the Dialogic® 2000 Media Gateway Series (DMG2000 Gateways) can address these disruptive situations and provide survivability for UC solutions.

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Introduction

Many enterprises are adopting Unified Communications (UC) solutions that use Voice over IP (VoIP) to deliver phone calls. An enterprise with a UC solution typically connects to a PSTN-based telephone in one of the following ways:

- Directs VoIP to the enterprise's IP PBX, which then connects to the PSTN network.
- Uses a VoIP gateway such as one from the Dialogic® 2000 Media Gateway Series (a "DMG2000 Gateway") to connect to the enterprise's TDM-based PBX.
- Uses a VoIP gateway such as a DMG2000 Gateway to connect directly to the PSTN.

Besides providing IP to TDM network connectivity, DMG2000 Gateways can also provide survivability for the following types of UC network issues:

- SIP endpoint out of service
- SIP proxy out of service
- SIP application server out of service
- SIP trunking network out of service
- Centralized applications, network out of service

SIP Endpoint Out of Service

In deployment scenarios where a SIP endpoint is out of service, a DMG2000 Gateway can reroute calls to the following alternate endpoints in order to maintain communication paths to critical employees:

- An alternate cell phone via the PSTN
- An alternate SIP phone via SIP-to-SIP routing
- An alternate analog phone via SIP-to-SIP routing
- An analog Telephony Adapter (ATA) device
- All of the above, in a predefined order

Figure 1 shows an example of a call scenario in which a DMG2000 Gateway reroutes a call to the called person's cell phone when their SIP phone is out of service. In this and all other figures, the numbers show the call routing sequence.
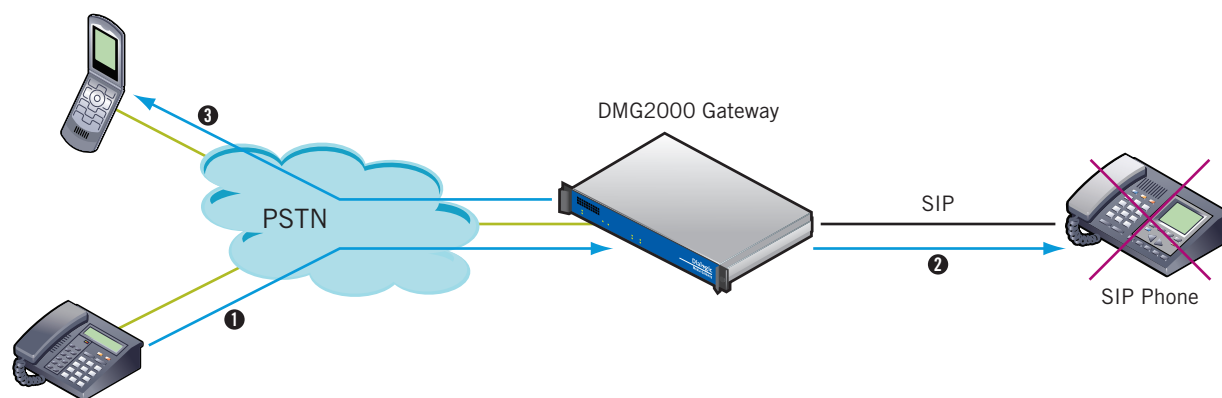

Figure 1. Rerouting Network Traffic to an Alternate Endpoint

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SIP Proxy Out of Service

In deployment scenarios where a SIP proxy server performs call setup functions, routing authentication, and authorization, a DMG2000 Gateway can communicate with an alternate SIP proxy server if the primary SIP proxy server goes out of service.

Figure 2 shows an example of a call scenario in which a DMG2000 Gateway fails over to an alternate SIP proxy server in order to maintain functionality when the primary SIP proxy server is out of service:
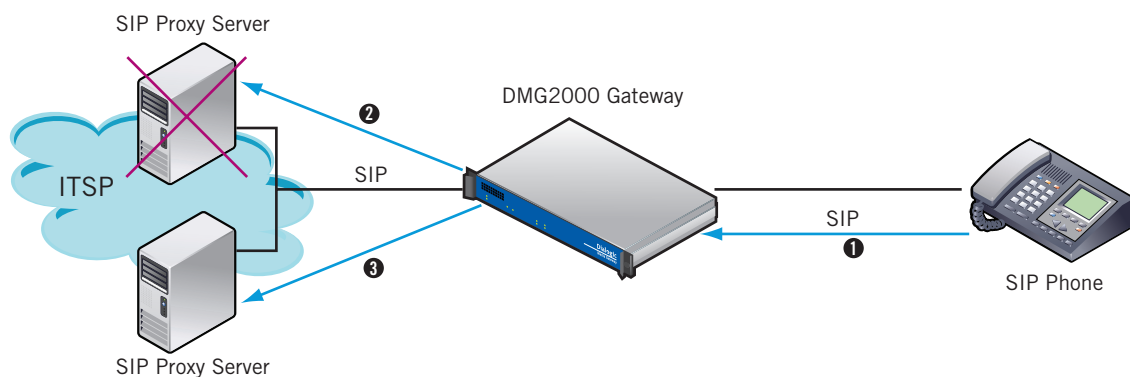
Figure 2: Failover to an Alternate SIP Proxy Server

SIP Application Server Out of Service

In deployment scenarios where application functions are centralized and/or application servers are virtualized, a DMG2000 Gateway can communicate with an alternate application server if the primary application server goes out of service.

Figure 3 shows an example of a call scenario in which a DMG2000 Gateway fails over to an alternate application server in order to maintain functionality when the primary application server is out of service:
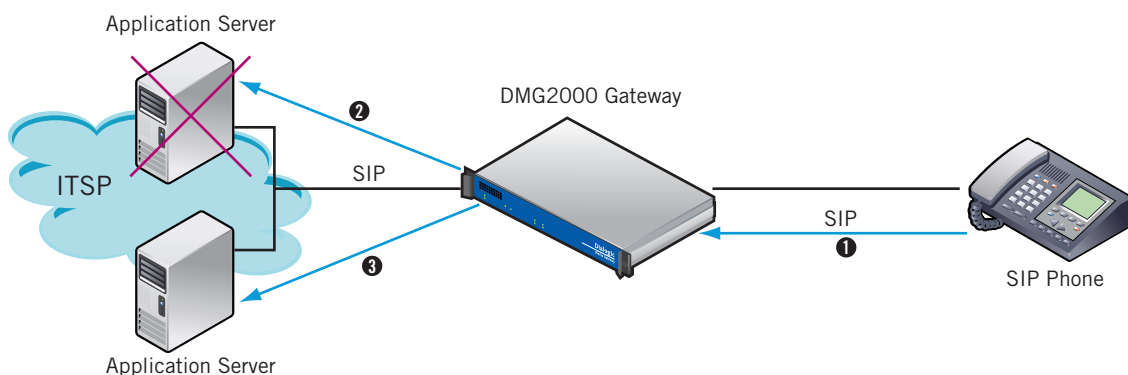

Figure 3. Failover to an Alternate SIP Application Server

SIP Trunking Network Out of Service

In deployment scenarios where SIP trunking provides network connectivity to premises via a SIP trunk, it is critical that SIP trunking solutions provide the same level of resiliency as tradition telephone networks. One way of providing sustained network up-time is to provide an alternate network connection. In this type of deployment scenario, a DMG2000 Gateway can reroute network traffic through the PSTN if the SIP trunk goes out of service.

Figure 4 shows an example of a call scenario in which a DMG2000 Gateway fails over to the PSTN in order to maintain functionality when a SIP trunk is out of service due to a WAN outage:
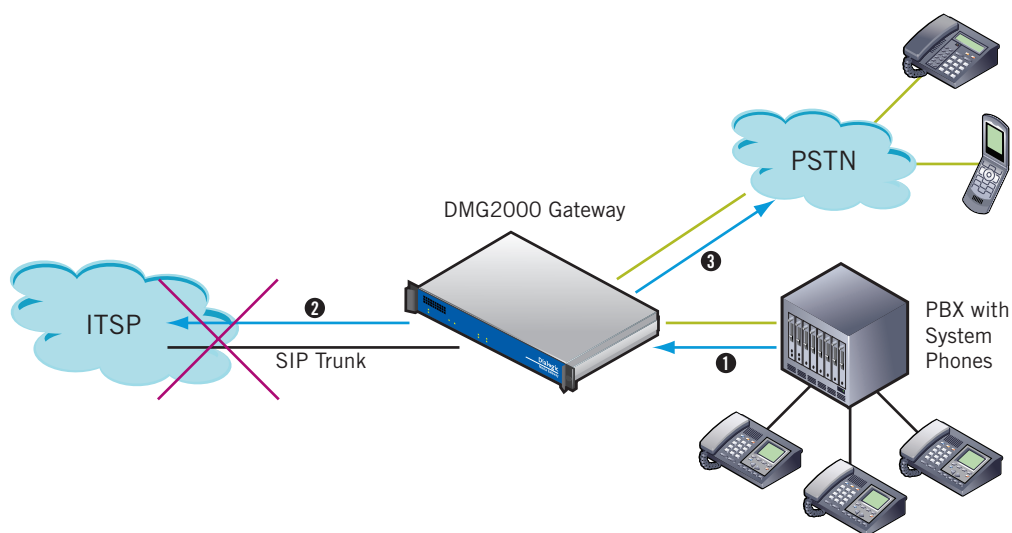
Figure 4. Failover to the PSTN

Centralized Applications, Network Out of Service

In deployment scenarios where application functions are centralized and/or application servers are virtualized, the remote site must maintain some level of functionality in the event that the central application is disconnected by a network outage.

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A DMG2000 Gateway can provide communication between external users and the centralized application server via the PSTN. It can also provide communication between IP and analog end points that may reside at the remote site. Figure 5 shows an example of a call scenario in which a DMG2000 Gateway provides an alternate connection to the centralized application server through the PSTN when a WAN outage disconnects the centralized application server from the remote site:
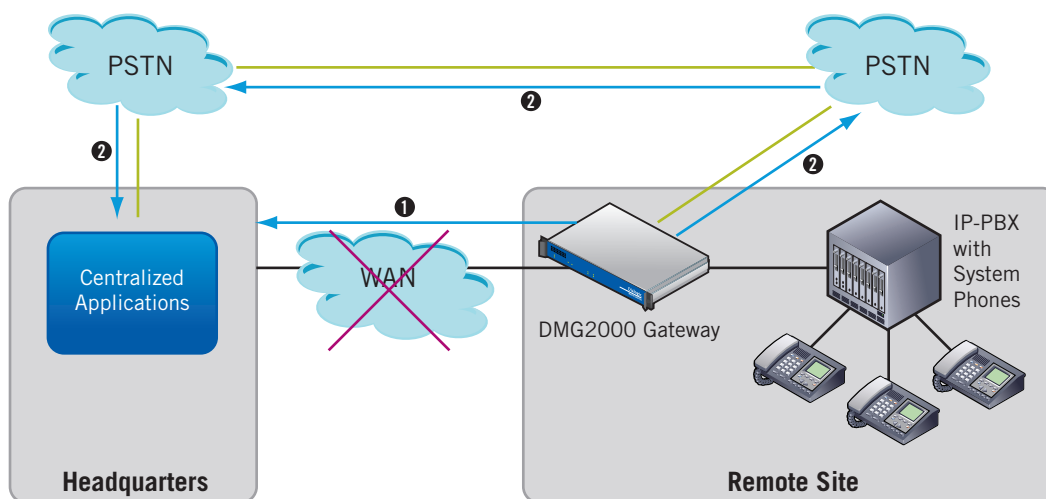
Figure 5. Enabling Alternate Call Routing Scenarios

For More Information

For more information about DMG2000 Gateways and UC, see the following topics on the Dialogic website:

Dialogic® 2000 Media Gateway Series

Unified Communication Solutions… Built On Dialogic

Supporting Analog Devices with the Dialogic® Media Gateway Series

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