

Lab Testing Summary Report

May 2011
Report SR110219

Product Category:

Unified Communications

Vendor Tested:

NEC

Products Tested:

UC for Enterprise (UCE) UNIVERGE SV8500 System



Key findings and conclusions:

- NEC UCE system transfers seamlessly between a variety of endpoints and types of communication, such as instant messaging, voice and video conferencing
- NEC UCE proved it is fully integrated with Active Directory, Exchange, Outlook, SIP smart phone, SIP vmail, SOAP, Exchange, UMS and OCS
- The system is highly available and passed failover testing without issue
- The NEC UCE database notification system provides real-time synchronization between NEC's UCE Manager (UNIVERGE MA4000), external, and internal applications

NEC's UC for Enterprise (UCE) in conjunction with the UNIVERGE SV8500 voice platform was evaluated by Miercom for its performance and resiliency capabilities as part of an ongoing assessment of unified communications products. Performance was verified through a methodical approach and review of system capabilities. The system was tested for its new and existing performance features. For resiliency, the testing subjected the product to a thorough battery of vulnerability analyses and scans, as well as a complex set of exploits designed to challenge the capabilities of the product.

The NEC UNIVERGE SV8500 is an IP-based architecture that unifies multimedia networks by integrating voice and data systems. It optimizes the mobile environment and can be configured for specialized businesses.

Figure 1: NEC UCE Manager (UNIVERGE MA4000) System Console

UC for Enterprise

NEC

Please follow the links below for components related to MA4000.

Prerequisites	MA4000 9.2.0 Release Notes (PDF)	
License Manager	View MA4000 9.2.0 Release Notes document	
UCE Manager(MA4000)	MA4000 Management System	Status: Needs Update
UCE Application Platform	Install MA4000 Management System web application	Available version: 9.2.0.87225
UCE Contact Center (Call Center WebX)	MA4000 Management System Installation Guide (PDF)	Installed version: 9.2.0.83094
UCE Contact Center (QueWebX)	View MA4000 Management System Installation Guide document	
UCE Desktop Agent (UNIVERGE UC700)	MA4000 Management System Security Guidelines (PDF)	
UCE Attendant (UNIVERGE UA5200)	View MA4000 Management System Security Guidelines document	
UCE Mobility (UNIVERGE MC550)		

Source: Miercom, May 2011

NEC's UCE Manager (UNIVERGE MA4000) shows a well organized management console for licensing and installation.

Because it is both multifunctional and presence driven, the NEC Unified Communications platform provides a single server/single point of administration solution. The single point of administration supports global change management by transmitting changes immediately to a specific client, group or enterprise. The UCE Desktop (UNIVERGE UC700) client solution provides an enhanced user experience from rules-based changes to video and collaboration. See *Figure 2* on page 3 of the NEC UC700 Desktop Client. NEC's UCE is an integrated solution encompassing contact center, voice, attendant, unified messaging, call control, IM, video and chat capabilities.

The NEC UCE system operated to specifications in the Miercom Performance Verified analysis. A series of proprietary tests were performed to evaluate the performance and resiliency capabilities of the NEC UCE system. The UCE performance was verified through a systematic approach and review of system capabilities. UCE and UNIVERGE SV8500 were tested for their new and existing performance features. For resiliency, we subjected the product to a series of component failover tests.

Miercom congratulates NEC for achieving Performance Verified Certification for the NEC UNIVERGE SV8500/UC with its capabilities in media progression and application integration. NEC has proven itself a leader in the unified communications enterprise space.

Configuration and Architecture

The NEC UCE system can be configured from a single point through either the UCE Manager (UNIVERGE MA4000) or the UCE Application Platform (UNIVERGE OW5000). Multiple

administrative user levels are easily set up in the system. The administrative levels can be segmented by resource, based on specific components, features and functionality. Refer to the "How We Did It" section on page 4 for further details on the configuration used in this testing.

The OW5000 is an application platform that combines communication tools, such as presence, status, unified messaging integration, instant messaging, mobility, and voice/video conferencing in one package. NEC, Microsoft and third party applications are published in the system and made available for immediate use.

Application Integration

The NEC UCE system provides Application Programming Interface (API) capability to integrate its system with many third party applications. These applications include uMobility, UCB, Polycom SIP and TAPI, among others. During testing, the system was fully integrated and functioned flawlessly with Active Directory, Microsoft Exchange, Outlook, SIP smart phone, SIP vmail, SOAP, UMS and OCS. See *Table 1* for more information.

The UCE Application Platform (OW5000) database notification provided real-time synchronization between the NEC UCE Manager (MA4000), as well as external and internal applications. Lightweight Directory Access Protocol (LDAP) Auto Provisioning allowed users to specify the PBX from any LDAP-enabled network management system. The NEC MA4000 watched for any changes and dynamically applied them to the PBX. Applications could also be published to the MA4000 directories and the properties made available via the Software Developers Kit (SDK).

Table 1: NEC OW5000 Architecture for Application Integration

Application	Microsoft LCS/OCS			NEC Applications		Partner Applications	
Application Programming Interface	Real-Time Call Control	TAPI SPI	C++	SOAP	SIP/Simple		
Application Services	Event Notification	Open Archives Initiative (OAI) Library	Java OAI Server	DB (MSSQL)	Presence Manager	Collaboration Server	IM Engine

Source: Miercom, May 2011

All applications work with the application programming interfaces and in turn, work with the application services.

The NEC UNIVERGE can be integrated with third party applications through its API capability with other applications that are SIP or SOAP compliant. There was an efficient integration between NEC UCE, Microsoft Exchange and Outlook. There was also integration compatibility between Outlook and the UCE Mobility (UNIVERGE MC550).

Navigation

The UCE Manager (MA4000) is a centralized Web-based management system. Navigation is achieved through a Graphical User Interface (GUI) that enables communication with the entire network. The system can be maintained and can perform internal event scheduling from a remote location. See *Figure 1* on page 1 for a view of the MA4000 GUI.

An application platform for developers, the OW5000 unites communication tools like presence, status, unified messaging, instant messaging, mobility, and voice/video conferencing in one solution.

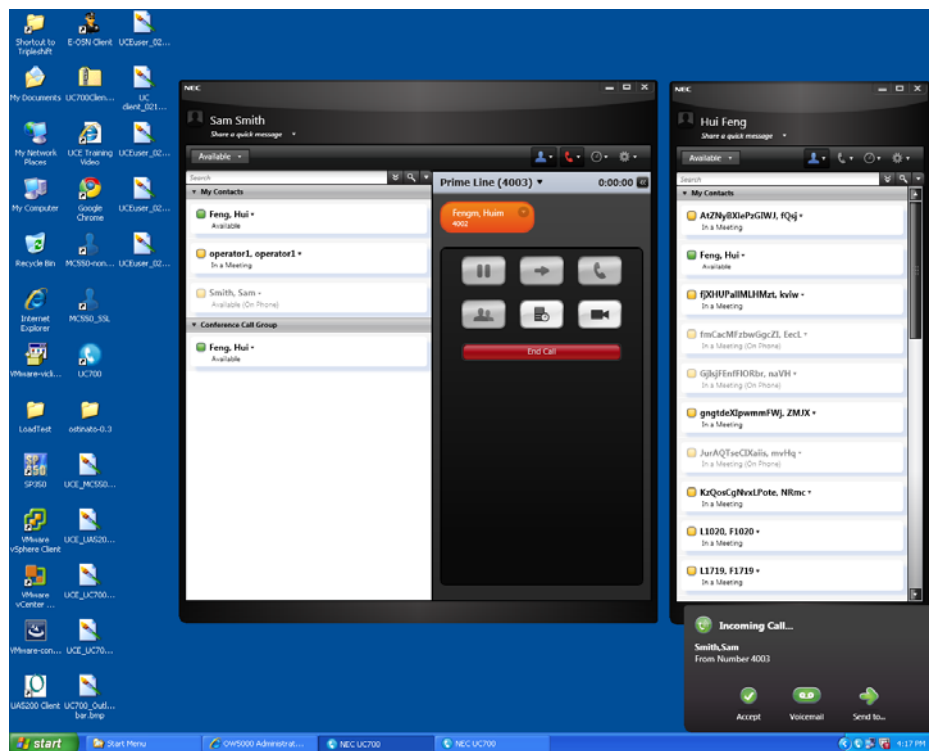
Changes were accomplished through the console on either the NEC MA4000 or the

OW5000. It was a simple point-and-click operation that allowed a given user's information to be viewed. A search can be done by name or by typing a partial name. Once found, a click on the Edit Format option allowed the viewing of the current configuration and the required changes to be made. These changes were then transmitted to the network servers and related PBXs on the network. The NEC MA4000 supports multiple skins (look and feel) for its GUI interface, so screens can be customized per individual. Smart typing also allows for easy navigation to any user name or other information.

Bottom Line

Being both multifunctional and presence driven, the NEC UCE Unified Communications platform offers a single server, single point of administration solution. The platform combines unified communications for both business and the enterprise. Single point of administration supports global change management by transmitting changes immediately to a particular client, group or enterprise. The client solution provides an enhanced user experience from rules-based changes to video and collaboration.

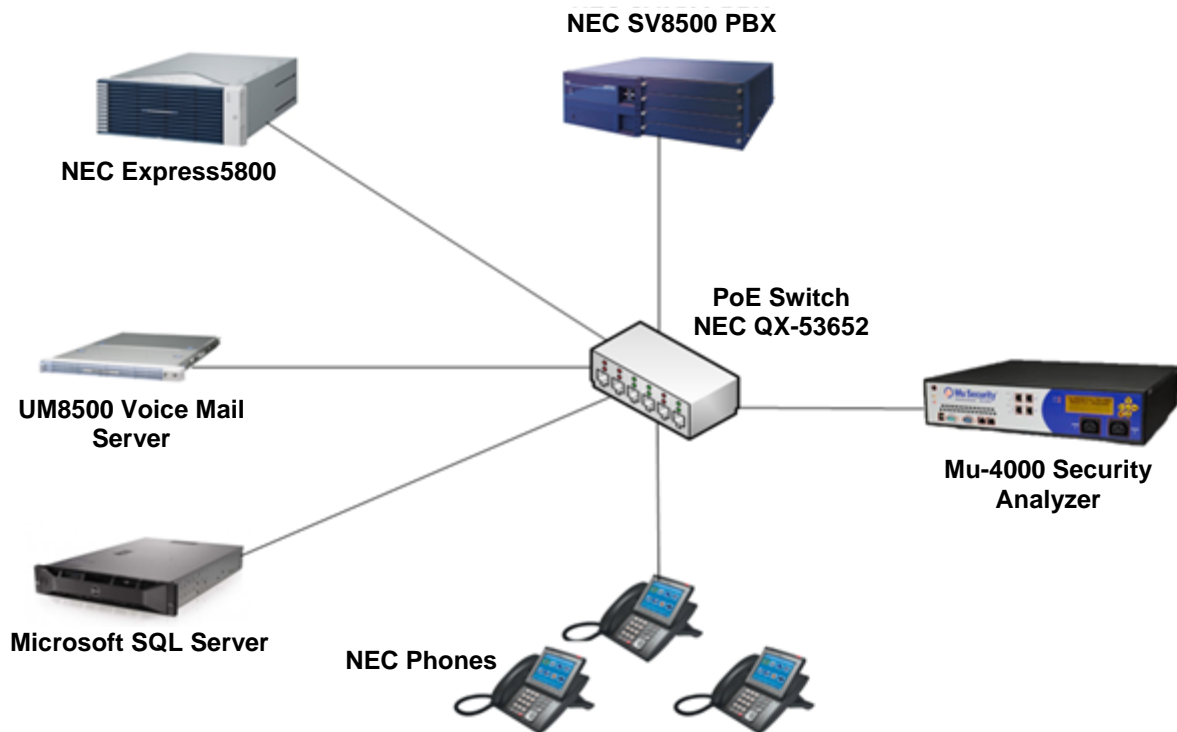
Figure 2: NEC UCE Desktop Client (UNIVERGE UC700)



NEC UCE Desktop Client (UNIVERGE UC700) GUI showing point and click capabilities for all types of communications.

Source: Miercom, May 2011

Test Bed Diagram



How We Did It

NEC engineers configured a specifically designed test bed to examine the performance capabilities of the NEC UNIVERGE SV8500/UCE System. The test bed consisted of a Gigabit Layer 2 Switch HP ProCurve 1800-24G, NEC SV8500 PBX with two ports to be tested, PoE Switch NEC QX-S3652, NEC DT700 Test Phones, NEC SP350 Softphones, Microsoft SQL Server Dell PowerEdge R510, UM8500 voice mail server, NEC Express5800/R320a-M4, client servers and client PCs.

Miercom verified performance of the NEC UNIVERGE SV8500/UCE System for configuration, architecture, systems management, application integration, new and unique features, load testing and vulnerability testing. The NEC Express 5800/R320a-M4 Fault Tolerant Server was tested for component failover of the server blade, power supply, NIC and hard drive.

The Mu Dynamics 4000 (www.mudynamics.com) was used to perform vulnerability assessments. The Mu Test Suite is capable of simulating Denial of Service traffic or creating millions of variations on valid service level traffic on virtually any protocol. The unit tests the ability of a UTM to protect a network from threats with published signatures, even before endpoint patches to guard against them are applied. The Mu Test Suite PVA subscription distills information from the most recently discovered root-cause vulnerabilities into test cases that target the vulnerabilities that lie behind tens of thousands unique exploit vectors.

The tests in this report are intended to be reproducible for customers who wish to recreate them with the appropriate test and measurement equipment. Miercom recommends customers conduct their own needs analysis and testing specifically for the expected environment for the product deployment before making a product selection. Current or prospective customers interested in repeating these results may contact reviews@miercom.com if you wish to receive assistance from Miercom professional services to conduct these tests.

Miercom Performance Verified

Based on our hands-on testing and observations, the NEC UNIVERGE SV8500/UCE System is awarded Performance Verified for its centralized administration of data and voice communications.

NEC UNIVERGE SV8500/UCE proved itself to be a highly available and resilient system in failover testing. The system showed it is fully integrated with Active Directory, Exchange, Outlook, SIP smart phone, SIP vmail, SOAP, UMS and OCS. Third party applications are readily published and available in the system.

The NEC UNIVERGE system proved to be a feature rich and more than capable unified communications platform for the enterprise.



**NEC UNIVERGE
SV8500/UCE**

NEC

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