

Redefining Enterprise Communications

## UNIVERGE 3C



UNIVERGE 3C is a powerful and innovative single software solution that provides an organization with rich Telephony, Unified Communications and Collaboration operating across premise, cloud or hybrid environments.

UNIVERGE 3C allows employees to connect from any location, on virtually any device, and collaborate with colleagues, customers and partners. The Services-Oriented Architecture with web services support ensures business continuity along with comprehensive management tools to administer it all.

**CONNECT.**

3C enables colleagues to be chased and contacted quickly and easily using company directory and Presence for real-time availability, inside and outside the office.

**COMMUNICATE.**

Users benefit from a single contact number across multiple devices, including seamless call transfers between public mobile networks and enterprise networks when a user is on the move.

**COLLABORATE.**

Fully interactive collaborations can be arranged in seconds - video conferencing, communal whiteboards and screen sharing are just a click away. Welcome to NOW!

## System Capacity

### Total System Capacity<sup>1</sup>

- > Up to 30.000 lines with any combination of registered station and trunk<sup>2</sup>
- > Up to 20.000 UC enabled user seats
- > Up to 20 Unified Communications Manager (UCM) server nodes
- > Up to 500.000 Busy Hour Call Attempts
- > Up to 960 media server sessions used for any combination of: voicemail, auto attendant, call monitor/barge, call recording.
- > Up to 20.480 concurrent mobility calls<sup>3</sup>
- > Up to 2.000.000 Contact entries in the 3C system

## Unified Communications Manager Server Capacity

### Per UCM Server Node<sup>4</sup>

- > Up to 3.000 lines<sup>5</sup> with any combination of registered station and trunk. Including up to 999 C-link trunks<sup>6</sup>
- > Up to 2.000 UC enabled user seats
- > Up to 250.000 Busy Hour Call Attempts
- > Up to 48 media server sessions used for any combination of: voicemail, auto attendant, call monitor/barge, call recording.
- > Up to 1.024 concurrent mobility calls

## Collaboration Meeting Manager Server Capacity

### Per CMM Server Node

- > Up to 300 concurrent meeting sessions including any mix of phone only, phone and web and web only participants<sup>7</sup>
- > Up to 500 concurrent meeting sessions when the "multiple CMM Service configuration" is applied<sup>8</sup>
- > Any combination of meeting types and media types up to the maximum concurrent sessions licensed. Meeting types include:
  - Public and Private
  - Scheduled and Instant/Ad hoc
  - Permanent and Reoccurring
- > Up to 16 web browser video sessions per meeting<sup>7</sup>

1. This varies based on the number and class of servers utilized as well as the range of devices and UC client applications utilized.  
2. Stations are SIP based line registrations, hard or soft, including IP Phones and analog phones connected through a media gateway. Trunks are per bearer channel registrations, hard or soft, including tie lines and PSTN connections of various types including analogue, digital and SIP based.  
3. Mobility calls are calls to/from outside phone numbers, assigned to users, either on the PSTN or on another PBX connected over a tie-line.  
4. This varies based on the class of servers utilized as well as the quantity of UC client applications hosted per server, the amount of reserve capacity set aside for fail over scenarios, among others.  
5. Typically 50% (i.e. 1,500 lines) is reserved for fail-over purposes in case of a redundant multi node network is being applied. As such a typical UCM node supports 1,500 lines.  
6. C-link is a proprietary protocol used to trunk to traditional NEC PBX systems.  
7. This varies based on the class of server utilized. Capacity and performance will also vary based on network infrastructure and bandwidth.

## Session Initiation Protocol (SIP) Support

The following SIP and SIP related standards are supported on the 3C system<sup>9</sup>:

### SIP Stations

- > RFC2833
- > RFC3261
- > RFC3262<sup>10</sup>
- > RFC3263
- > RFC3264
- > RFC3265
- > RFC3311
- > RFC3325
- > RFC3326
- > RFC3428
- > RFC3515
- > RFC3581
- > RFC3665
- > RFC3725
- > RFC3842
- > RFC3891
- > RFC4028
- > RFC4411
- > RFC4412

### SIP Trunks

The core standards document for SIP trunking is RFC3261. Originally defined in RFC2543, the current standard is contained largely in RFC3261 and RFCs 3262-3265.

## Security<sup>11</sup>

### Transport Layer Security Encryption (TLS)

- > Call control with SIP
- > Application sessions with HTTPs
- > Configuration file and firmware download with HTTPs

### Secure Real Time Transport Protocol (sRTP) Encryption

- > Audio media streams
- > Video Media streams

### Real Time Messaging Protocol Encryption (RTMPE)

- > UNIVERGE 3C Web Conferencing:
  - Web browser audio media streams
  - Web browser video Media streams
  - Web conferencing content sharing

### User Authentication

- > Uniform user credentials with Active Directory authentication

### Security Certifications

- > US Department of Defense Joint Interoperability Test Command Unified Capabilities Requirements:

- Information Assurance
- PBX level 1
- Local Session Controller

8. This is accomplished by means of separating the 3C's Phones Server module from the other parts of the CMM server.  
9. NEC does not claim to support all aspects of these standards, and does not ensure full interoperability with any SIP device. NEC does ensure the features and functions for certified SIP stations. See the NEC product manuals for full details.  
10. Limited support for RFC3262.  
11. Capabilities vary based on selected endpoints.



## Media Sessions and Codecs Supported

### Unified Communications Manager

#### Audio<sup>12</sup>

##### Encoding:

- > AMR-WB
- > CLEARMODE
- > G.722
- > G.722.1
- > G.729
- > iLBC
- > G711a (PCMA)
- > G711u (PCMU)
- > SIREN14
- > SIREN22
- > T.38
- > telephone-event
- > v150fw
- > NoAudio

#### Video

- > H261
- > H263
- > H263-1998
- > H264
- > MPEG4\_QVGA
- > MPEG4\_VGA

##### Resolutions:

- > HD: 1280x720, 1920x1080
- > VGA: 640x480
- > QVGA: 320x240
- > CIF: 352x288
- > QCIF: 176x144

##### Bit Rates:

- > 128 kbps
- > 256 kbps
- > 384 kbps
- > 512 kbps
- > 768 kbps
- > 1024 kbps
- > 1472 kbps
- > 1920 kbps
- > 2048 kbps

##### Frame Rates:

- > 10 fps
- > 15 fps
- > 30 fps

### Collaboration Meeting Manager

- > RTMP

- > RTMP

- > 240x144 (8 fps)
- > 256x154 (10fps)
- > 320x192 (20fps)
- > 640x384 (20fps)

- > 50 kbps
- > 100 kbps
- > 512 kbps
- > 1000 kbps

- > 8 fps
- > 10 fps
- > 20 fps

12. Supported codecs and media format vary by endpoint. Certain media services may restrict codec use. Refer the UNIVERGE 3C system requirements for details.



## Operating Systems and Environments

### Unified Communications Manager Server

- > Microsoft Windows Server 2012 R2 64 bit
- > Microsoft Windows Server 2008 R2 SP1 64bit
- > Microsoft Windows 2011 SBS Standard with Windows Server 2008 R2 SP1 64bit or Windows Server 2008 SP2

### Collaboration Meeting Manager Server

- > Ubuntu v14.04 LTS 64-bit

### Desktop UC Client

- > Microsoft Windows 10
- > Microsoft Windows 8.1
- > Microsoft Windows 7 SP 1
- > Apple Mac OS X 10.6 or later

### Outlook Connect add-in

- > Microsoft Outlook 2016
- > Microsoft Outlook 2013
- > Microsoft Outlook 2010
- > Microsoft Windows 10
- > Microsoft Windows 8.1 SP1
- > Microsoft Windows 7 SP1

### Mobile UC Client

- > Apple iOS 8.0 or later
- > Google Android OS 4.0 or later

### Collaboration Client

- > Apple iOS 7.1 or later
- > Google Android OS 3.2 or later

## IT Infrastructure Compatibility

### Virtualized Server Support

- > Microsoft Windows 2008 R2 or 2012 R2 Hyper-V
- > VMWare EXSi v4.0 or higher

### Microsoft Active Directory Integration

- > Windows 2012 or 2008 Schema
- > User authentication
- > User information and details
- > Directory search

### Microsoft Exchange Integration

- > Exchange 2016, 2013 SP1, 2010 SP3
- > Voice mail messaging / Unified Messaging
- > Global Address List Search
- > Calendar presence

### Network Services

- > Dynamic Host Configuration Protocol (DHCP)
- > Domain Name Services (DNS)
- > Multicast IGMPv2 (optional)

### High Availability

- > UCM Servers
  - Primary UCM Server: 1+1 Active/Standby using virtualization and automated live migration
  - Secondary UCM Servers: N+1 Active/Active
  - Periodic database replication to all secondary servers
- > CMM Server
  - 1+1 Active/Standby using virtualization and automated live migration
- > Media Gateways<sup>13</sup>
  - Automated failover/failback to designated UCM servers
- > IP Phones<sup>13</sup>
  - Automated failover/failback to designated UCM servers

13. Capabilities may vary depending on the media gateways used.

For further information please contact NEC EMEA or:

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