Requirements for the deployment of an own FastViewer server solution version 3.1

Minimum requirements for the installation of the FastViewer WebConferenceServer with up to 100 concurrent users:

- **Hardware requirements**
  - Xeon-processor with at least 2,5 GHz frequency
  - At least 4 GB RAM
  - At least 30 GB free hard drive space
  - 1 Gbit network adapter

- **Operating systems**
  - Windows Server 2008
  - Windows Server 2008 R2
  - Windows Server 2012
  - Windows Server 2012 R2
  - Windows Server 2016
  - Windows Server 2019
  - Only Microsoft Windows Server 2012 R2 up to Windows Server 2019 is supported.

- **Databases**
  - Microsoft SQL Server 2008 Express or newer.

- **Supported virtualization platform**
  - Microsoft Hyper-V
  - VMware

- **Bandwidth requirements**
  The expenditure of the bandwidth per FastViewer session depends on the type of the connection:
  - connections with desktop sharing: averagely 15 kbit/s per participant.
  - connections with video sharing: up to 300 kbit/s per user, depending on the video quality.
  - connection with voice (VoIP): averagely 30 kbit/s per user.

- **IP/DNS configuration**
  The FastViewer server is located in a DMZ (Demilitarised Zone). The server requires an IP address or alternatively a DNS host entry, which is listening to the IP address of the server.

  **PLEASE NOTE:** Preferentially, you should use the full qualified domain name (FQDN) for the server configuration, instead of the IP address. For example: If you are using the IP address for your connections and the IP address of the server will be changed, all existing conferences cannot connect to the server and cannot be started any longer.
- **Port enabling**
  In order to reach the WebConference server, the following ports need to be open in the firewall and should not exclusively be used by another program or service:

  - HTTP port 80
  - HTTP port 443 (Only if a certificate is used. The port number is freely selectable)
  - TCP port 5000
  Port 5000 enables high quality performance.

  **PLEASE NOTE:** The HTTP protocol is used to retrieve the available servers at module startup. If you use your own FastViewer server solution, this accessing can be accomplished by using HTTPS instead of HTTP. Additionally the port number can be chosen arbitrary. (For example, HTTPS 321) Thus, it is possible to restrict the used protocols and thus the requirement of the ports to be opened when using FastViewer and to guarantee your own security standards. For a description of each configuration step, see the FastViewer server manual.

- **Number of parallel users per server**
  Please note that an exact statement regarding the maximum number of simultaneous users cannot be made since this number is strongly dependent on the use of the functions described above.

  The maximum number of users per server is calculated as follows:

  \[
  \frac{\text{Network connection of the server} \times 1024}{\text{Sum bandwidth of functions}}
  \]

  *For example:*
  
  Server connection: 100 mBit/s
  On average, 5 videos are transmitted via the server with 200 kBit/s each.
  Desktop sharing is active with 15 kBit/s

  \[
  \frac{100 \text{ mBit/s} \times 1024}{5 \times 200 \text{ kBit/s} + 15 \text{ kBit/s}} = \frac{102400 \text{ kBit/s}}{1015 \text{ kBit/s}} = 100 \text{ participants}
  \]

  The given desktop sharing value is a determined average value, which has resulted from the practice. For example, through Excel lists, or if there are frequent screen changes, this value increases accordingly.
A further aspect to be considered here is the connection of mobile end devices iOS and Android applications, as well as our webclient. The data for these devices is provided by Microsoft’s IIS (Internet Information Server). Generally, we recommend running this service on a separate server so that the performance of the FastViewer server is not compromised. If videos are transmitted via IIS, they must be transcoded by the IIS. This process requires resources and the IIS server should be cascaded according to the desired usage.

**Requirements for the installation of the FastViewer WebClient:**

- **Operating systems**
  - Windows Server 2008
  - Windows Server 2008 R2
  - Windows Server 2012
  - Windows Server 2012 R2
  - Windows Server 2016
  - Windows Server 2019
  - Only Microsoft Windows Server 2012 R2 up to Windows Server 2019 is supported.

- **.NET Framework**
  - .NET Framework 3.5 SP1 has to be installed on the server.

- **Server roles**
  - IIS (Internet Information Services) including ASP.net has to be installed.

- **Supported web browser**
  All web browser with JavaScript compatibility, e. g.
  - Internet Explorer (minimal version 7.0)
  - Mozilla Firefox (minimal version 3.0)
  - Apple Safari 5
  - Google Chrome
  - Opera

- **Port enabling**
  TCP port 5000 have to be enabled on the firewall.