



SPIRIT Telecommunication Requirements

November 17, 2011

TELECOMMUNICATIONS REQUIREMENTS

Web-based applications have bandwidth requirements that vary based on application design, but acceptable levels of performance can generally be obtained with an average of 128 kbps per user. VPN connections over low end DSL or cable links and satellite links introduce a higher network latency which impact minimum response time. While web-based applications will operate over higher latency links system, the response time cannot be guaranteed with these connections. The following table has the suggested maximum number of client connections per line type and is based on our experience with operating other SPIRIT systems.

Below is a list of recommended connections based on the number of simultaneous users, but not availability of service by ISP. This list applies to both clinics and state office locations.

1 to 3 users	<ul style="list-style-type: none"> • Low to mid speed DSL estimated 128 kbps to 384 kbps • Low to mid speed cable modem estimated 128 kbps to 384 kbps
3 to 7 users	<ul style="list-style-type: none"> • Mid to high speed DSL estimated 384k bps to greater than 1.5 mbps • Mid to high speed cable estimated 384 kbps to greater than 2 mbps • Fractional T-1 line estimated 384 kbps to 1.5 mbps
8 or 24	<ul style="list-style-type: none"> • High speed DSL estimated greater than 768 kbps • High speed cable modem estimated greater than 768 kbps • Fractional or full T-1 estimated speed 768 kbps to 1.5 mbps

**Total required bandwidth per simultaneous user can be estimated by multiplying simultaneous number of users by 128 kbps. i.e., three simultaneous users would require 384 kbps for acceptable performance.*

The state central processor site will require a high bandwidth, high capacity connection to the backbone of the internet in order to allow for reliable and adequate access to system users. The connection should at minimum be a T1. Actual connection type will be sized appropriately to the number of State estimated SPIRIT users.

As the actual implementation of the system approaches, the telecommunication needs of the clinics, state office, and central processing site should be reviewed to ensure that the most current and cost efficient services are utilized.

As the SPIRIT application has grown and changed throughout its life cycle dial up has been deemed an unacceptable approach to connectivity due to XML packet size of information exchanged with local workstations and the server. It is anticipated that certification of a participant over dial up could take four hours or more over dial up. Dial up is not a viable connection opportunity even at full speed dial up.

Satellite clinics that operate off-line because of the lack of internet connectivity at the clinic location will return to a main office that has DSL to complete the check-in/checkout process.