



60.2.1 Servers

In computing, a file server is a computer attached to a network that has the primary purpose of providing a location for the shared storage of computer files (such as documents, sound files, photographs, movies, images, databases, et cetera) that can be accessed by the workstations that are attached to the computer network.

Servers also provide shared service to the equipment in the field and simplify how that equipment is accessed. For example, each of the computers in the STOC can operate any of the dynamic message signs, regardless of the sign's model, firmware, etc.

The term server highlights the role of the machine in the client-server scheme, where the clients are the workstations using the storage. A file server is usually not performing any calculations, and does not run any programs on behalf of the clients. It is designed primarily to enable the rapid storage and retrieval of data where the heavy computation is provided by the workstations.

Milwaukee is the primary traffic operations center and referred to as the State Traffic Operations Center but a secondary traffic operations center is maintained in the Southwest region.

60.2.1.1 Data Servers

There are two general types of data servers on the network, data base servers and Statewide Incident Notification System (SINS) servers. Database servers utilize Oracle as the current database management system (DBMS) used by the STOC. This is one of the core servers used by the TransCore supplied system software (TransSuite). SINS servers provide database services for the SINS application used by control room operators to record infrastructure and traffic incidents.

60.2.1.2 Communication Servers

The following types of communication servers are on the network:

- Traveler Information System (TIS) – this server controls access to dynamic message signs (DMS) and highway advisor radio (HAR). This is one of the core servers used by the TransCore supplied system software (TransSuite).
- Freeway Management / Central Communications (FMS/CCS) – controls communications with controllers of various designations (ATR, CS, RM and SDS) used either as count stations or to operate system ramp meters. This is one of the core servers used by the TransCore supplied system software (TransSuite).
- Web – web interface – provides access to system software for approved off-site users. This is one of the core servers used by the TransCore supplied system software (TransSuite).

These data servers are duplicated and otherwise backed up at multiple locations throughout the state.

60.2.1.3 Video Servers

There are currently ten video servers on the network, eight in Milwaukee and two in Madison. The video servers primarily provide access to the images captured by the CCTV cameras and control to those cameras located along the freeway throughout the state.

- IVC (referred to by the manufacturer's name – Industrial Video Control)
 - Servers 1-8 in Milwaukee and Servers 1-2 in Madison
 - 24 cameras per server on most servers
 - IVC #5 has 100 cameras – this is the server that records 15 minute blocks of video for the previous 72 hours.

60.2.2 Security

The servers and field equipment and outside agencies connected via network to the BHO STOC center are separated by a firewall from the State Enterprise network. The firewall is jointly managed by BHO and BITS.

User accounts, authentication and authorization are handled by BHO STOC IT staff located in Milwaukee and Madison. A project to be completed by Fall 2009 will move from the current Primary/Backup Domain Controllers to an Active Directory installation.

Requests for user accounts and authorization for those accounts to use BHO STOC workstations, servers and

field equipment should go to BHO STOC IT unit.

In general terms, server and software selection are managed by BHO. BHO staff will assess the benefits of the equipment as well as the risk of additions to the network.

60.2.3 Network

Advanced Traffic Management System (ATMS) is one term used to describe the overall system used to manage Intelligent Transportation System (ITS) components. An important part of an ATMS infrastructure, and any involved system, is the network. This basic network structure exists in both Madison and Milwaukee operations center.

The ATMS network is a separate BHO STOC maintained network and is firewalled from the Wisconsin DOT enterprise network for several reasons:

- Networked field equipment extends along the freeway and provides multiple dispersed connection points
- Enhance system security
- Provide a barrier to viruses

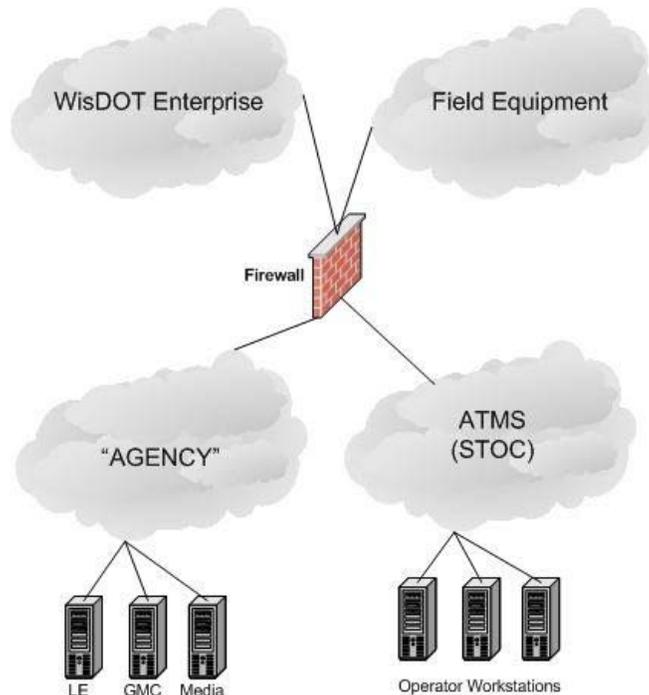


Figure 60.2-1 General Network Diagram

60.2.4 Fiber Network

Extending the network out to field equipment and interconnected multiple sites and agencies is achieved through the fiber network infrastructure.