

DSR Second Level Maintenance POC Overview



September 27, 2005



Background

- **Part of the WJHTC DSR In Service Management Team (ISMT) mission is to provide second level maintenance support for the FAA En Route DSR sub-system.**
- **It has been suggested that remote awareness of the overall state of DSR at each ARTCC would enhance the ISMT ability to perform this mission.**
- **SIG ERAM306**
 - **States the need for a centralized approach for supporting system maintenance for the En Route ARTCCs.**
 - **Suggests developing remote capabilities for assessing system health and problem determination.**
 - **Suggests a central repository of key system data to support trend analysis and future planning.**



Data Types and Data Collection:

What and When

- **The key to performing remote maintenance is obtaining the right information at the right time**
- **System Health**
 - **Data to assess DSR system health has always been used for DSR functional verification and regression testing at the WJHTC**
- **Collection Frequency**
 - **Periodic System Health Assessments**
 - **Short term (hourly) using alert notification based on defined thresholds**
 - **Long Term (Daily) for archival**
 - **Real Time**
 - **For problem solving purposes**



IIF Proof of Concept Components

- **DSR System Wide Access Capability (SWAC)**
 - **First level filter for raw DSR SAR data**
 - **Input to System Health Report**
 - **Data source for real time data acquisition**
- **DSR System Health Report (SHR)**
 - **Culminates SWAC data to assess overall DSR system health**
- **Simple Network Management Protocol (SNMP)**
 - **IBM SNMP agent – Used to handle alert notification events to the Network Manager and requests from the Network Manager**
 - **Tivoli Netview – Network Manager Software communicates with the an SNMP agent for system data acquisition/presentation**
- **Relational Database Software**
 - **MySQL relational database software for archival of routine Daily SHRs**
- **Real Time SWAC Viewer Application**
 - **Allows a user to view DSR SWAC output remotely using a second level of filtering**

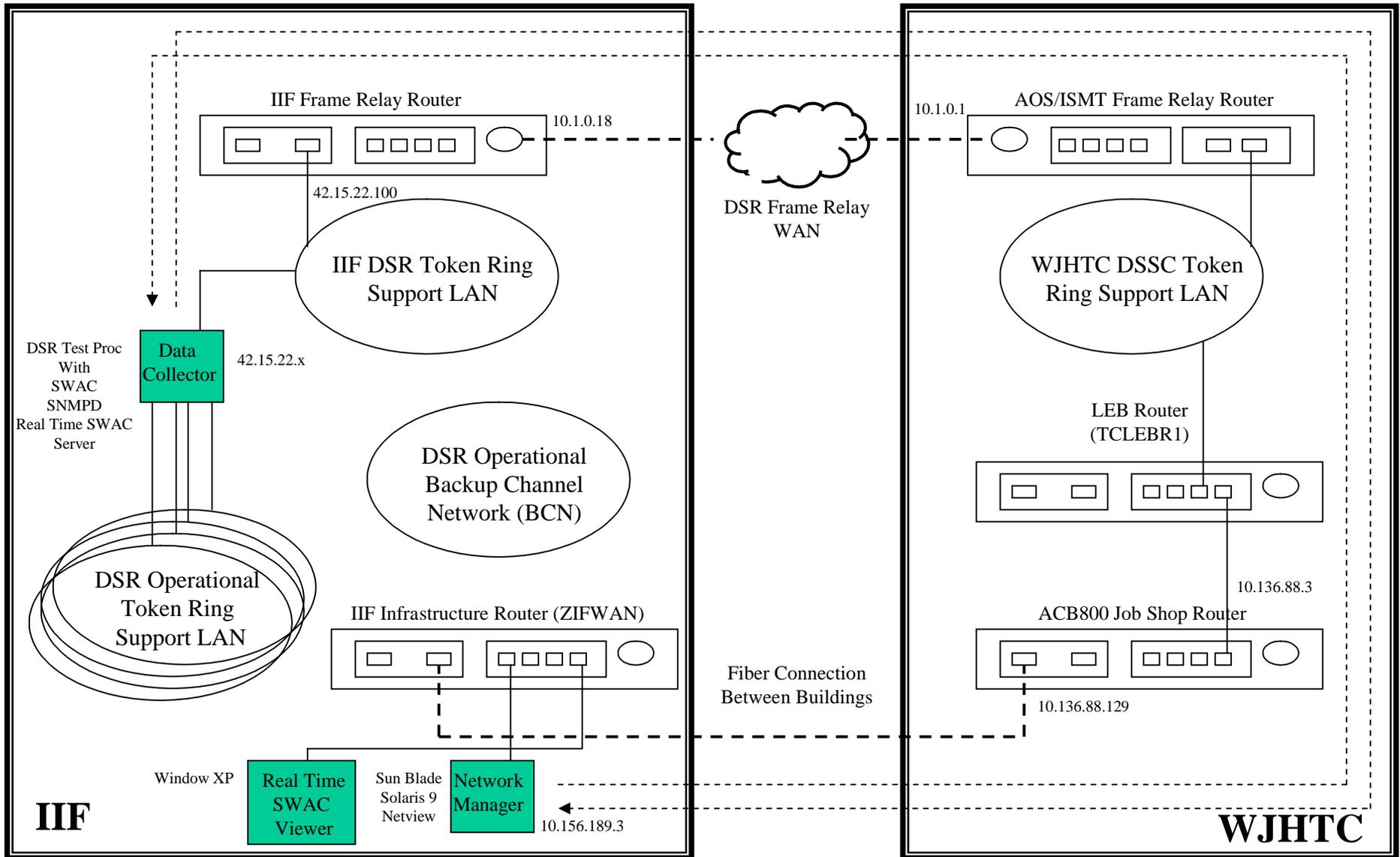


DSR Remote Second Level Maintenance Proof of Concept Architecture

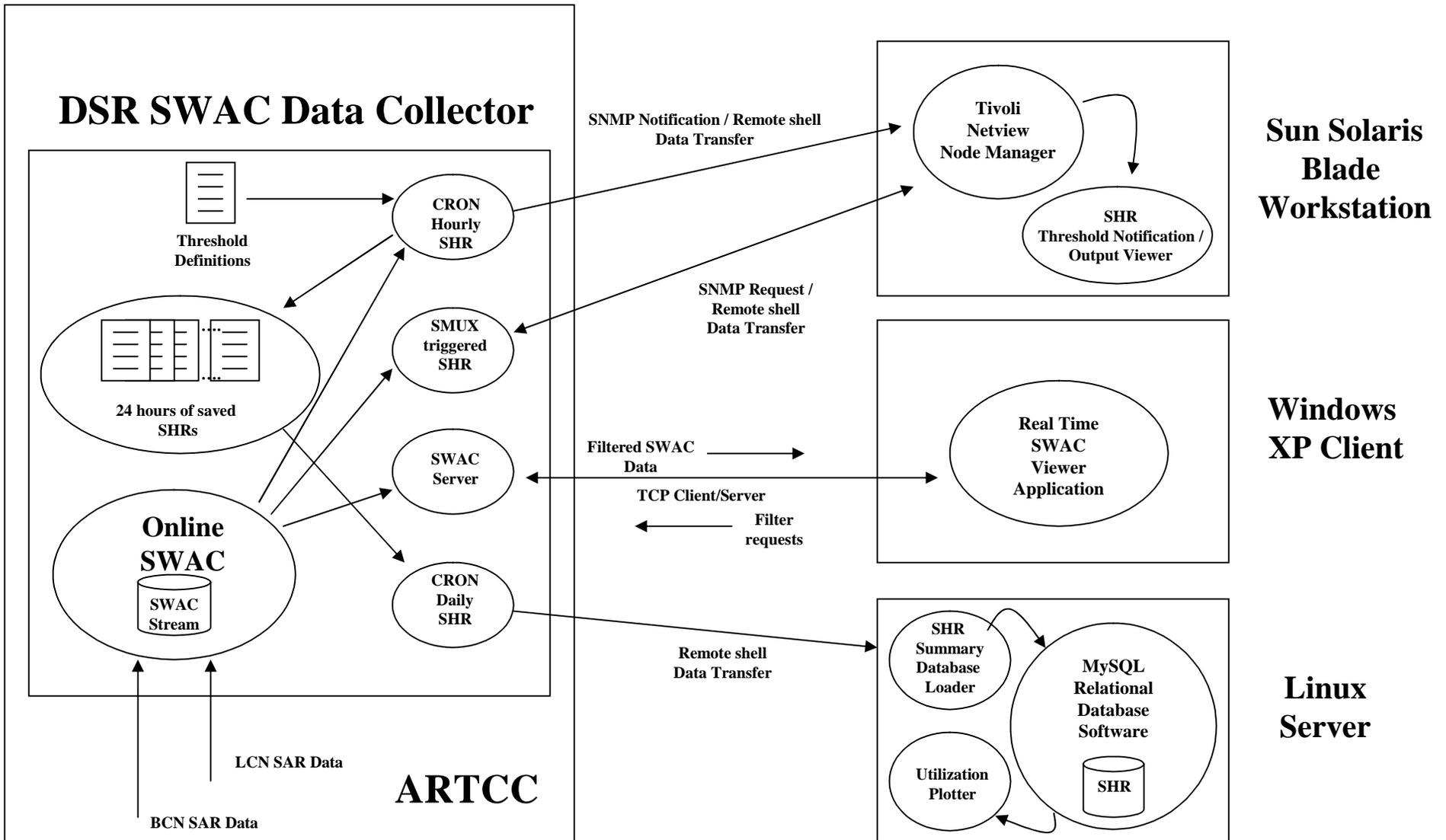
- **SWAC Data Collector / ARTCC SNMP agent**
 - **RS6000 AIX 3.2.5 Test Processor**
- **Network Node Manager**
 - **Sun Solaris 9 running Tivoli Netview Node Manager**
- **Real Time SWAC Data Viewer**
 - **Microsoft Windows XP**
- **Network**
 - **DSR Frame relay WAN**
 - **IIF DSR Operation/Support systems**
 - **IIF Development LAN represents the WJHTC DSSC**



Proof of Concept Architecture Diagram



Proof of Concept Software Architecture



Proof of Concept Functional Threads

- **Periodic System Health Reporting**
 - **Hourly alerting based on adapted thresholds**
 - **Daily reporting for archival**
 - **On demand**
- **Real Time DSR system data acquisition**
 - **Real Time SWAC Viewer Application**
- **System Health Report Archival / Trend Analysis**
 - **Daily SHR Database load**
 - **SHR LCN Utilization plotting**

