BU CT Service Products

System 800xA Core Fingerprint Reports
User Manual

System Version 1.2

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User Manual

System Version 1.2

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About This User Manual

Any security measures described in this document, for example, for user access, password security, network security, firewalls, virus protection, etc., represent possible steps that a user of a SharePoint environment may want to consider based on a risk assessment for a particular application and installation. This risk assessment, as well as the proper implementation, configuration, installation, operation, administration, reporting and maintenance of all relevant security related equipment, software, and procedures, are the responsibility of the user of the SharePoint environment.

General

This manual describes the System 800xA Core Fingerprint reports for the BU CT Service Products with appropriate examples.

Unless otherwise mentioned, the content and procedures described in this manual are applicable for the latest revision of the System 800xA 5.1. A separate information note or a new section is introduced if a specific feature is applicable to systems other than System 800xA 5.1.

User Manual Conventions

Microsoft Windows conventions are normally used for the standard presentation of material when entering text, key sequences, prompts, messages, menu items, screen elements, etc.

Terminology

The listing includes terms and definitions that apply to the System 800xA where the usage is different from commonly accepted industry standard definitions and definitions given in standard dictionaries such as Webster's Dictionary of Computer Terms.

Section 1 Introduction

This section introduces the System 800xA Core Fingerprint Performance Status report and the System 800xA Core Fingerprint Software Status report present in the My Control System.

System 800xA Core Fingerprint Performance Status Report

The System 800xA Core Fingerprint Performance Status Report helps the user to identify the nodes with issues and provides suggestions to correct them.

The System 800xA 5.1 Performance Status Data Collector utility is used to collect the data (in the XML format) from the System 800xA network, to generate the System 800xA Core Fingerprint Performance Status report. Refer to My Control System help for more details.

The .*xml* file collected using the System 800xA 5.1 Performance Status Data Collector utility is uploaded in the recorded data folder of My Control System. While uploading the .*xml* file, a benchmark report gets generated in the reports folder of My Control System. For more information, refer to *System 800xA Benchmark Reports User Guide (2PAA108483*)*.

> The System 800xA Service Data Collector tool is used to collect data from the System 800xA networks to generate System 800xA Core Fingerprint Performance Status report.

The service engineer generates the System 800xA Core Fingerprint Performance Status report in My Control System with the uploaded .*xml* file as the input.

> The System 800xA Core Fingerprint Performance Status report can be generated for the existing uploaded .*xml* files also in My Control System.

For more information on data collection, *refer to the System 800xA Core Benchmark Fingerprint Data Collection User Guide (2PAA110012*).*

Based on the customer request, the service engineer uploads the System 800xA Core Fingerprint Performance Status report in the reports folder of My Control System.

The terms and conditions on the usage of My Control System are explained in the My Control System document.

System 800xA Core Fingerprint Software Status Report

System 800xA Core Fingerprint Software Status Report helps the user to identify the System 800xA nodes with software issues and recommendations to correct them.

The System 800xA Service Data Collector Tool is used to collect data from the System 800xA networks to generate the Software Status Fingerprint report. For more information on data collection, *refer to the System 800xA Benchmark Fingerprint Data Collection User Guide (2PAA110012*).*

The service engineer generates the Software Status Fingerprint report in My Control System with the uploaded *.cab* file as the input.

The System 800xA Core Software Status Fingerprint report can be generated for the existing uploaded *.cab* files also in My Control System.

Based on the customer request, the service engineer uploads the System 800xA Core Software Status Fingerprint report in the reports folder of My Control System.

The terms and conditions on the usage of My Control System are explained in the My Control System document.

Section 2 System 800xA Core Fingerprint Performance Status Report

This section introduces the System 800xA Core Fingerprint Performance Status report for Performance Status.

This report helps the user to identify the system performance issues and provides suggestions to correct them.

Structure

The structure (Table of Contents) of the System 800xA Core Fingerprint Performance Status report for Performance Status is mentioned in the user manual. The description of the report items are given in Description on page 15.

Executive Summary

> Introduction
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> Benchmark Gap Analysis
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Technical Findings Checklist

Category Details

> Category Details
>
> Components Check

Windows Domain Check

Windows Check

Resources Check

Network Check

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Error Log Check

Appendix

Components Check

Graphic Card Hardware Drivers

Hard Disks Installation and Utilization

Hard Disks File System Integrity

RAM Installation and Utilization

Network Adapter Configuration

Windows Domain Check

DC Diagnostic Check

DNS Name Resolution Check

Windows Check

Auto-Start Processes Check

Mandatory Third Party Software Installations

Mandatory System Specific Regional and Time Zone Settings

Mandatory User Specific Regional Settings

Configuration of Time Synchronization Protocols

Uniqueness of Computer System ID's.

Resources Check

Windows Processes

Windows Service States

Windows Time Synchronization

Network Check

Throughput Performance to all connected computers

Throughput Performance to all connected AC 800M Controllers

Network Diagnostic Check

800xA Aspect Directory Check

Database Structure Consistency

Database Replication, Size and Licensing

Error Log Check

Melody Connectivity Servers

Windows Event Logs

Interpretation

The System 800xA Core Fingerprint Performance Status report for Performance Status provides an overall picture of the nodes in the network. Nodes are grouped based on the category.

These reports enable the plant operator/technician to identify the overall status of components that have system performance issues.

Description

This section describes the topics specified in the

The Finger Print report has an Identification Page, after the Table of Contents, wherein the Service Engineer specifies the following details:

•   Report Reference Number, Version and Date

•   Details of the Organization for which the report is generated

•   Details of the personnel who prepared the report

The details on the Identification Page are only for easy identification and management of reports.

Executive Summary

This section provides the summary of the System 800xA Core Fingerprint Performance Status report for Performance Status.

Introduction

System 800xA Core Fingerprint Performance Status report for Performance Status is a comprehensive diagnostic analysis of system performance Status issues of the nodes in the plant that highlights Technical Findings and potential problems that could cause long outages of the plant.

Technicians in the plant need to maintain the proper hardware in the network without fails.

If the nodes in the network are not maintained with proper standards and specifications can cause long outages of the plant.

Benchmark Gap Analysis

Provides statistical summary of findings. Refer to Benchmark Gap Analysis on page 31 in Appendix A for examples.

ROI Financial and Safety impact

Provides information on the impact of identified errors and warnings. Also including the financial gains.

Summary of findings

Provides a high level summary of different hardware in the network.

For example:

- **Components Check**
    - Graphic Card Hardware Drivers

This section contains the summary information about the graphic card hardware drivers on the nodes. "**Six**" nodes have warning.

– Hard Disks Installation and Utilization

This section contains the summary information about the hard disk drive installation and usages on the nodes.

> Refer to Components Check on page 32 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

• **Windows Domain Check**

– DC Diagnostic Check

This section contains the summary information about the DC diagnostics on the nodes.

– DNS Name Resolution Check

This section contains the summary information about the DNS resolution check on the nodes.

> Refer to Windows Domain Check on page 33 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

• **Windows Check**

– Auto-Start Processes Check

This section contains the summary information about Process enabled during startup on the nodes.

– Mandatory Third Party Software Installations

This section contains the summary information about mandatory third party software installations on the nodes.

> Refer to Windows Check on page 33 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

• **Resources Check**

–   Windows Processes

This section contains the summary information about Windows operating processes on the nodes.

–   Windows Service States

This section contains the summary information about Windows services status on the nodes.

Refer to Resources Check on page 33 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

- **Network Check**

    –   Throughput Performance to all connected computers

    This section contains the summary information about the network throughput status on the nodes.

    –   Throughput Performance to all connected AC 800M Controllers

    This section contains the summary information about the AC 800M network throughput status on the nodes.

Refer to Network Check on page 33 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

- **800xA Aspect Directory Check**

    –   Database Structure Consistency

    This section contains the summary information about the consistency database structure on the system.

    –   Database Replication, Size and Licensing

    This section contains the summary information about the database licensing on the system.

Refer to 800xA Aspect Directory Check on page 33 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

- **Error Log Check**

  – Melody Connectivity Servers

    This section contains the summary information about the error logs from the Melody connectivity on the nodes.

  – Windows Event Logs

    This section contains the summary information about Windows events log details on the nodes.

Refer to Error Log Check on page 34 in Appendix A for detailed examples of System 800xA Core Fingerprint Performance Status reports.

Recommendations and implementation

Provides the recommendations for each of the errors and warnings and how to resolve the problems.

Components Check

The recommendations are grouped together similar to the Components Check section in Summary of findings.

Windows Domain Check

The recommendations are grouped together similar to the Windows Domain Check section in Summary of findings.

Windows Check

The recommendations are grouped together similar to the Windows Check section in Summary of findings.

Resources Check

The recommendations are grouped together similar to the Resources Check section in Summary of findings.

Network Check

The recommendations are grouped together similar to the Network Check section in Summary of findings.

800xA Aspect Directory Check

The recommendations are grouped together similar to the System 800xA Aspect Directory Check section in Summary of findings.

Error Log Check

The recommendations are grouped together similar to the Error Log Check section in Summary of findings.

Conclusions

Final conclusion statement of the System 800xA Core Fingerprint report. This report is updated by the service engineer based on the detailed analysis of the collected data. Eventually, this will be discussed with customer representatives.

Technical Findings Checklist

This section enables the plant operator/technician to identify the overall status of the components that have technical issues.

Each point in the checklist is controlled at the Fingerprint service. The column "Outcome" from the Figure in Technical Findings Checklist on page 35 indicates the status of findings as follows:

OK =   No problems found.

Remark =   May lead to problems later on.

Problem =   Problems that should be corrected.

Refer to Technical Findings Checklist on page 35 in Appendix A for examples.

Section 3 System 800xA Core Fingerprint Software Status Report

This section introduces the System 800xA Core Software Status Fingerprint reports for Software Status.

This report helps the user to identify the issues of the System 800xA software installed on each node, and provides recommendations to correct them.

Structure

The structure (Table of Contents) of the System 800xA Core Software Status Fingerprint report for the Software Status mentioned in this manual. The description of the report items are given in Description on page 22.

Executive Summary

> Introduction

> Benchmark Gap Analysis ...

Technical Findings Checklist

ABB Software

> ABB 800xA Base 5.1.0/0

> ABB 800xA Common 3rd Party Install 5.1.0/0 ...

Microsoft Software

> Microsoft Windows Server 2008

Security Updates

> .NET Framework 2.0 SP2 and .NET Framework 3.5 SP1 for Windows Vista Windows Server 2008 (983589)

Active Directory and AD LDS on Windows 2003 Windows Vista Windows 7 Windows 2003 Windows 2008 (981550) ...

Third Party Software

Adobe Reader 9.3.2...

2007 Microsoft Office Suite Service Pack 2 (SP2)

Microsoft .NET Framework 3.5 SP1 ...

Non-Validated Software

The section describes the details of non-validated software which are installed on the nodes in System 800xA. These software will not be validated if installed.

Appendix

All nodes by application.

Interpretation

The System 800xA Core Software Status Fingerprint report for Software Status provides an overall picture of nodes in the plant that summarizes the System 800xA software installed on each node. Nodes are grouped based on the category.

These reports enable the plant operator/technician to identify the overall status of components that have software issues.

Description

This section describes about the topics specified in the Structure on page 21.

The Finger Print report has an Identification Page, after the Table of Contents, wherein the Service Engineer specifies the following details:

- Report Reference Number, Version and Date

- Details of the Organization for which the report is generated

- Details of the personnel who prepared the report

The details on the Identification Page are only for easy identification and management of reports.

Executive Summary

This section provides the summary of the System 800xA Core Software Status Fingerprint report for Software Status. The Executive summary consists of the following sections:

- Introduction on page 23

- System 800xA Basic Data on page 23

- Benchmark Gap Analysis on page 24

- System, Safety and ROI Financial impact on page 24

- Summary of findings on page 25

- Recommendations and implementation on page 25

- Conclusions on page 26

Introduction

The System 800xA Core Software Status Fingerprint report for Software Status is a comprehensive diagnostic analysis of software installed on the nodes in the plant that highlights Technical Findings and issues that could cause poor performance.

Technicians in the plant need to maintain the proper standards of nodes in network. Software installations are to be as per standards specified in the System 800xA documentation. For more information about software standards, refer to *System 800xA Installation Manual (3BSE034678*)*. If the nodes in the plant network are not maintained with proper standards and software installations can cause long outages of the plant.

System 800xA Basic Data

This section displays the following basic details about the System 800xA installation:
- 800xA System ID
- 800xA System Name

- Number of checked computer nodes
- Number of checked 800xA servers
- Number of 800xA Engineering clients
- Number of 800xA Operator Clients
- Number of checked Domain Controllers
- Number of checked Non-800xA Nodes
- Number of checked software packages

Benchmark Gap Analysis

The summary of findings based on the technical finding´s checklist is found in this section.

The summary of findings list as follows:

- ABB software

- Microsoft software

- Microsoft updates

- Third party applications

The goal of the benchmark gap analysis is to have no questionable and problematic software.

Refer to Benchmark Gap Analysis on page 73 in Appendix B for detailed examples of System 800xA Core Software Status Fingerprint reports.

System, Safety and ROI Financial impact

This section explains the overall impact of not correcting the reported problems in this report. The impact can be indicated in terms of financial losses or productivity loss.

This section explains serious issues that need immediate attention from ABB service organization. It also provides a detailed cost breakdown for correcting the errors and indicates the effort involved.

Summary of findings

This section should explain the summary of software status against the nodes. The section is further broken down into ABB software, Microsoft Software, Microsoft security updates and Third Party Applications.

The Summary of Findings section also tabulates, with color-coded indications, the software status in each node. Incorrect software versions are shown in yellow. An yellow color may also indicate that the server node or a client node is not detected. Missing software is shown in red.

> **i** Note to the Service Engineer: This section can be customized as per the customer needs. The summary information in tabular form is also available in APPENDIX.

Recommendations and implementation

This section covers the recommendations to fix the reported problems with the detailed steps/procedures on how to fix the errors and problems.

This section has the following two parts:

- Primary Recommendations - This part contains top priority recommendations which need to be implemented as early as possible.

- Secondary Recommendations - This part contains recommendations aimed at continued optimum performance and maintenance of the system.

The recommendations deal with the following kinds of software:

- ABB Software - For missing or incompatible version, please refer to the installation and configuration document of System 800xA. For individual System 800xA products, refer to the release notes, Installation and Configuration document to provide appropriate corrective recommendations.

> **i** Note to the Service Engineer: For any clarifications on recommendations and implementations, contact customer support of individual System 800xA products.

- Microsoft Software - For missing or incompatible version, please refer to the installation and configuration document of System 800xA. For individual Microsoft products, refer to the release notes, Installation and Configuration document to provide appropriate corrective recommendations.

• Security Updates - For missing or <> updates, please refer to the security updates bulletin.

• Third Party Software - For missing or incompatible version, please refer to the installation and configuration document of System 800xA. For individual third party products, refer to the third party's Installation and Configuration document to provide appropriate corrective recommendations.

• Non-validated Software - Discuss with the customer to identify the use of individual non-validated software. Based on the discussions, provide appropriate recommendations.

Conclusions

Final conclusion statement of the System 800xA Core System 800xA Core Software Status Fingerprint report. This report is updated by the service engineer based on the detailed analysis of the collected data. Eventually, this will be discussed with customer representatives.

Technical Findings Checklist

This section enables the plant operator/technician to identify the overall status of the components that have software issues.

ABB Software

This section provides information that is to be used by the end customer to make corrections to the system and record the activities. The Recommendations/ Corrective actions are mentioned in the reports against each of the check items.

Refer to ABB Software on page 74 in Appendix B for more details examples of Technical Findings checklist.

Microsoft Software

This table is to be used by the end customer to make corrections to the system and record the activities. The Recommendations/ Corrective actions are mentioned in the reports against each of the check items.

Refer to Microsoft Software on page 74 in Appendix B for more details examples of Technical Findings checklist.

Security Updates

This table is to be used by the end customer to make corrections to the system and record the activities. The Recommendations/ Corrective actions are mentioned in the reports against each of the check items.

Refer to Third Party Software on page 75 in Appendix B for more details examples of Technical Findings checklist.

Third Party Software

This table is to be used by the end customer to make corrections to the system and record the activities. The Recommendations/ Corrective actions are mentioned in the reports against each of the check items.

Refer to Third Party Software on page 75 in Appendix B for more details examples of Technical Findings checklist.

Non-Validated Software

Non-validated software are not part of System 800xA or Microsoft installations which are not recommended to install on nodes in System 800xA. These software will not be validated if installed.

Detailed Analysis and Recommendations

The Detailed analysis and recommendations node-wise section tabulates, in node-wise subsections, the following software:

- Installed software, that are the recommended versions - Highlighted in Green

- Installed software, that are not the recommended versions - Highlighted in Yellow.
  The recommended version to be installed is specified in the column alongside.

  A missing server or client node is also highlighted in Yellow. The report indicates the missing node as **X** in the corresponding column.

- Missing software - Highlighted in Red.
  The recommended software and version to be installed is specified in the column alongside.

The following categories of software are tabulated:

- ABB Software

- Microsoft Software

- Security Updates

- Third-Party Software

ABB Software

This section lists the softwares that are missing and version mismatches. The listing is against the node and the base version.

Refer to ABB Software on page 76 in Appendix B for more details examples of Technical Findings checklist.

Microsoft Software

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Refer to Microsoft Software on page 77 in Appendix B for more details examples of Technical Findings checklist.

Security Updates

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Refer to Security Updates on page 78 in Appendix B for more details examples of Technical Findings checklist.

Third Party Software

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Refer to Third Party Software on page 79 in Appendix B for more details examples of Technical Findings checklist.

Non-Validated Software

Non-validated software are not part of System 800xA or Microsoft installations which are non-validated to ABB software settings to install on nodes in the plant. These software will not be validated if installed.

Appendix

The Appendix describes about all the software analysis details. This is categorized into two subsections:

- List of Missing or Incorrect Software Installations
- Node wise Detailed Results and Checklist

List of Missing or Incorrect Software Installations

Technical Finding Checklist

This section tabulates softwares that are missing in the System 800xA with a link provided to the respective chapter. The tables are listed under the following categories:
- ABB Software
- Microsoft Software
- Third Party Software

Figure 1 shows the Technical Finding Checklist.

	Outcome	Done?	Link to Chapter
ABB 800xA Base 5.1.0 RU1k	Problems		7.1.2.1.1
ABB 800xA Base 5.1.0/0	Problems		7.1.2.1.2
ABB 800xA for MOD 300 5.1.0/1	Warnings		7.1.2.1.3
ABB 800xA for MOD 300 Visual Basic Graphics Extension 5.1.0/1	Warnings		7.1.2.1.4
ABB Diagnostics Collection Tool 5.1.2-3	Warnings		7.1.2.1.5
ABB Diagnostics Collection Tool Plugins 5.1.2-3	Warnings		7.1.2.1.6
ABB Engineering Studio 5.1.0/0	Warnings		7.1.2.1.7
ABB Engineering Studio 5.1.0/0 RU 1	Warnings		7.1.2.1.8

Figure 1. Technical Finding Checklist

All Nodes With Missing or Wrong Versions

This section tabulates the nodes that have missing software or have software with version mismatches. The tables are listed under the following categories:

• ABB Software
• Microsoft Software
• Third Party Software

Figure 2 shows the all nodes with Missing or Wrong Versions.

ABB 800xA for MOD 300 5.1.0/1					
Node	**Installed Version**	**Base Version**	**Node**	**Installed Version**	**Base Version**
H-OS3A	5.01.0001.00007	5.01.0001.00006	H-OS1A	5.01.0001.00007	5.01.0001.00006
CS2	5.01.0001.00008	5.01.0001.00006	H-OS2	5.01.0001.00007	5.01.0001.00006

Figure 2. All Nodes With Missing or Wrong Versions

Node Wise Detailed Results and Checklist

This section shows the list of softwares with their installed versions and new versions that are to be installed. The tables are listed under the following categories:

• ABB Software
• Microsoft Software
• Third Party Software

Figure 3 shows all node wise detailed results and checklist.

ABB Software	Installed Versions found	Versions to be installed
ABB Central Licensing System Extension 5.1.0/1	5.1.4143.35500	
ABB Inform IT - DataDirect 5.1.0/1	5.1.4711.0421	
ABB Diagnostics Collection Tool Plugins 5.1.2-3	5.1.2.34	Incorrect Version - Install 5.1.2.58
ABB 800xA for MOD 300 5.1.0/1	5.01.0001.00007	Incorrect Version - Install 5.01.0001.00006
ABB Inform IT - History 5.1.0/1	5.1.4711.0421	
ABB 800xA for MOD 300 Visual Basic Graphics Extension	5.01.0001.00006	

Figure 3. Node Wise Detailed Results and Checklist

Appendix A System 800xA Core Fingerprint Performance Status Report

This section introduces the examples of System 800xA Core Fingerprint Performance Status reports.

Benchmark Gap Analysis

The system health is measured with technical finding´s checklist. The summary of those finding is shown Figure 4.

	Good	Questionable	Problems
Components Check	9	11	10
Windows Domain Check	0	3	4
Windows Check	16	5	9
Resources Check	9	0	9
Network Check	14	0	1
800xA Aspect Directory Check	3	0	0
Error Log Check	11	0	0
Total	62	19	33

Figure 4. Performance Status - Alarm Benchmark Summary Per Evaluation Module

Summary of Findings

Provides a high level summary of different hardware in the network.

For example:

Components Check

- Graphic Card Hardware Drivers

    5 Nodes have warnings and1 Nodes have errors

- Hard Disks Installation and Utilization

6 Nodes have warning

Windows Domain Check

- DC Diagnostic Check

  1 Nodes have warnings

- DNS Name Resolution Check

  2 Nodes have warnings and 4 Nodes have error

Windows Check

- Auto-Start Processes Check

  4 Nodes have warnings and2 Nodes have errors

- Mandatory Third Party Software Installations

  6 Nodes have errors

Resources Check

- Windows Processes

  No nodes have Errors/Warning.

- Windows Service States

  4 Nodes have errors.

Network Check

- Throughput Performance to all connected computers

  No nodes have Errors/Warnings.

- Throughput Performance to all connected AC 800M Controllers

  1 Nodes have errors

800xA Aspect Directory Check

- Database Structure Consistency

No nodes have Errors/Warnings

- Database Replication, Size and Licensing

No nodes have Errors/Warning

Error Log Check

- Melody Connectivity Servers

No nodes have Errors/Warnings

- Windows Event Logs

No nodes have Errors/Warning

Technical Findings Checklist

	Outcome	Performed	Comments References & Links
Components Check			
Graphic Card Hardware Drivers	Warnings		
Hard Disks Installation and Utilization	Warnings		
Hard Disks File System Integrity	Problems		
RAM Installation and Utilization	OK		
Network Adapter Configuration	Problems		
Windows Domain Check			
DC Diagnostic Check	Warnings		
DNS Name Resolution Check	Problems		
Windows Check			
Auto-Start Processes Check	Warnings		
Mandatory Third Party Software Installations	Problems		
Mandatory System Specific Regional and Time Zone Settings	OK		
Mandatory User Specific Regional Settings	OK		
Configuration of Time Synchronization Protocols	OK		
Uniqueness of Computer System ID's.	OK		
Resources Check			
Windows Processes	OK		
Windows Service States	Problems		
Windows Time Synchronization	Problems		
Network Check			
Throughput Performance to all connected computers	OK		
Throughput Performance to all connected AC 800M Controllers	OK		
Network Diagnostic Check	OK		
800xA Aspect Directory Check			
Database Structure Consistency	OK		
Database Replication, Size and Licensing	OK		
Error Log Check			
Melody Connectivity Servers	OK		
Windows Event Logs	OK		

Figure 5. Performance Status- Technical Findings Checklist

Each point in the checklist is controlled at the System 800xA Core Fingerprint Performance Status report service. The column "Outcome" from Figure 5 indicates the status of findings as follows:

OK =   No problems found.

Warnings =   May lead to problems later on.

Problem =   Problems that should be corrected.

System 800xA Core Fingerprint Performance Status Report

A detailed report with information of the exact nature of the errors, and also recommendations for the possible fixes to correct those errors as follows:

Components Check

Graphic Card Hardware Drivers

Warning Message Texts	Recommend	Reference
For best PG2 graphics performance, a graphic card shall have 128 MB RAM for every attached Monitor. For VB graphics the minimum requirement is 64 MB RAM size.	Reduce the number of attached monitors to fulfill that 128 MB is available for each monitor; or replace the graphic card.	*Third Party HW products verified for Industrial IT System 800xA, (3BSE046579)*, General requirements for HW; and *Data Sheet System 800xA, System Capabilities, (3BSE039129)*.

Hard Disks Installation and Utilization

Error Message Texts	Recommend	Reference
It is strongly recommended to have at least 25% free disk space.	Delete unnecessary files on the disk, if possible. If this is not possible, replace the disk or disk partition by a larger one.	*System 800xA, Installation, (3BSE034678*)*.

Warning Message Texts	Recommend	Reference
The disk usage is approaching the value of 75%, which shall not be exceeded.	In the future, watch the disk usage. If it grows, delete unnecessary files on the disk (if possible). Otherwise replace the disk or disk partition by a larger one.	*System 800xA, Installation, (3BSE034678*).*
The Microsoft Defragmentation Utility **defrag.exe** has been used to analyze the current disk fragmentation. It has reported the recommendation to defrag the disk partition.	Before a disk defragmentaion is invoked, it should be verified that the disk partition is free of errors. See KPI 3 (CheckDisk) for details. Also it should be verified that the disk usage is below 75 %. If that is fulfilled, defragment the disk by opening the Disk Properties => Tools Tab => Defragment Now. Some impact on the PC's performance may be observed during defragmentation. But in general, this can be done also during normal 800xA operation.	*System 800xA, Installation, (3BSE034678*).*

Hard Disks File System Integrity

Error Message Texts	Recommend	Reference
Please read the detailed results, and analyze the reported error messages.	Check and repair the disk by opening the Disk Properties => Tools Tab => Check Now. Select the option "Automatically fix file system errors" and click on Start. If you are prompted that the files cannot be accessed, or that there are open handles on the disk, then schedule the check for the next restart; and reboot the computer.	Microsoft TechNet "Troubleshooting Disks and File Systems". http://www.microsoft.com/technet/prodtechnol/winxppro/reskit/c28621675.mspx
Caution! This is a severe problem. This indicates a physical damage of the hard disk.	Replace the disk hardware by a new one.	Microsoft TechNet "Troubleshooting Disks and File Systems". http://www.microsoft.com/technet/prodtechnol/winxppro/reskit/c28621675.mspx
The total RAM Memory usage is too high (near 100%).	Analyze in detail which are the processes that use much (or too much) memory. Check if the installed memory meets the requirements in 3BSE046579. Reboot the computer and watch the memory consumption in the future. Add more memory to the computer, if possible.	*Third Party HW products verified for Industrial IT System 800xA, (3BSE046579*).*
The virtual RAM Memory usage too high.	Check (and if necessary correct) the Virtual Memory Configuration, in accordance to the 800xA Installation Manual.	*System 800xA Installation, (3BSE034678*)*

RAM Installation and Utilization

Warning Message Texts	Recommend	Reference
The total RAM Memory usage is above normal.	Analyze in detail which are the processes that use much (or too much) memory. Check if the installed memory meets the requirements in 3BSE046579. Reboot the computer and watch the memory consumption in the future. Add more memory to the computer, if possible.	*Third Party HW products verified for Industrial IT System 800xA, (3BSE046579*).*
The virtual RAM Memory usage is above normal.	Check (and if necessary correct) the Virtual Memory Configuration, in accordance to the 800xA Installation Manual.	*System 800xA Installation, (3BSE034678*)*

Network Adapter Configuration

Error Message Texts	Recommend	Reference
The order of the network interfaces correctly shall be configured for the primary network as the top selection, and the secondary network next. For nodes that are connected to more than one network area, the interfaces for the Client Server Network shall be listed before the interfaces for the Control Network.	Configure the network adapters in accordance with the section "Configuring the Order of the Network Interfaces" in 3BSE034463-510 A, page 133 - 134.	*System 800xA Network Configuration, (3BSE034463*)*
The subnet mask 255.255.252.0 is recommended for RNRP. This subnet mask must be used, if implicit RNRP configuration is applied. Deviations from this value are only allowed for networks with explicit RNRP configuration, or for networks which do not use RNRP (e.g. control networks with other controllers than AC 800M).dcdiag NetLogons failed.	Check if the reported network is a Client/Server Network or a Control Network for AC 800M. If it is, and if it uses implicit RNRP Configuration, a corrective action is required: either the subnet mask must be changed, or explicit RNRP configuration must be applied. No action is required for Freelance Control Networks with subnet mask 255.255.240, or for Melody Control Networks with subnet mask 255.255.255.0. Other types of network connectivity may have different requirements.	*System 800xA Network Configuration, (3BSE034463*)*

Error Message Texts	Recommend	Reference
Since 800xA version SV 5.0 SP2, all network adapters shall be configured with parameters for the DNS Server IP Addresses. For older 800xA versions, this shall only be done for the Client/Server network adapters. One or more network adapter has been found where these settings are missing.	Configure the network adapter settings in accordance to section "General DNS configuration in each node" of 3BSE034463-510 A for SV 5.1; or to the corresponding section in previous document versions. Heed "Table 12" of this document as a typical configuration example.	*System 800xA Network Configuration, (3BSE034463*)*
A DNS Server, which is configured as Preferred DNS Server, fails to resolve the IP address of the host computer.	Verify the correct IP Address and DNS Server functionality. Run in CMD the command "nslookup COMPUTER DNS", where COMPUTER is the own 800xA Computer Name, and DNS is the IP Address of the Preferred DNS Server.	*System 800xA Network Configuration, (3BSE034463*)*
A DNS Server, which is configured as a third DNS Server, fails to resolve the IP address of the host computer. This is often found as a result of wrong network configuration, when the third DNS Server a server outside of the 800xA domain in the plant network.	If an external DNS Server in the plant network needs to be included in the 800xA domain name resolution, configure the external DNS Server as a Forwarder in the 800xA DNS Server.	Microsoft TechNet Article "Configure a DNS server to use forwarders". For Windows Server 2003, see http://technet.microsoft.com/en-us/library/cc773370%28WS.10%29.aspx For Windows Server 2008, see http://technet.microsoft.com/en-us/library/cc754941.aspx

Error Message Texts	**Recommend**	**Reference**
To avoid wrong IP name resolutions, it is mandatory that the client/server network adapters are registered in the DNS server - and only the client/server adapters. Since 800xA SV 5.1, the adapters from the secondary RNRP network shall also be registered in DNS.	Verify and, where necessary, correct the network adapter settings. An update of the DNS registration can be forced by the command "ipconfig /registerdns". Also verify the host records in the forward lookup zone of the DNS server, and the pointers in the reverse lookup zone; and correct them, if necessary.	*System 800xA Network Configuration, (3BSE034463*)*
For 800xA Client/Server Networks fixed IP addresses shall be configured for the network adapters, instead of obtaining an IP address automatically (which is the Windows default).	Configure fixed IP addresses. If possible, use the recommended addresses, as described in table 12 of 3BSE034463.	*System 800xA Network Configuration, (3BSE034463*)*

Warning Message Texts	Recommend	Reference
The network adapter configuration parameter "Default Gateway" is only required for nodes that do not support RNRP, e.g. for managed switches or time servers, or controllers other than AC 800M.	Use a "Default Gateway" only for non-RNRP nodes, and validate routing. In CMD the command "route print" can be used to validate the routing vial the default gateway.	*System 800xA Network Configuration, (3BSE034463*)*
For 800xA Networks fixed IP addresses shall be configured for the network adapters. The reported network adapter is either unused, or uses a DHCP adapter, which is not part of the 800xA installation.	Configure fixed IP addresses. If possible, use the recommended addresses, as described in table 12 of 3BSE034463. If the reported IP address is in the range of 169.254.0.1 to 169.254.255.254, no DHCP server was found. This indicates an unused network adapter, which is recommended to be disabled.	*System 800xA Network Configuration, (3BSE034463*)*
The network adapter configuration parameter "Default Gateway" is only required for nodes that do not support RNRP, e.g. for managed switches or time servers, or controllers other than AC 800M.	Use a "Default Gateway" only for non-RNRP nodes, and validate routing. In CMD the command "route print" can be used to validate the routing vial the default gateway.	*System 800xA Network Configuration, (3BSE034463*)*
An enabled network adapter is reported with no cable connected. This is either an unused adapter, or the originally attached cable has lost its connection.	Check the usage of the network adapter. If it is unused, it is recommended to disable it. Otherwise the broken cable connection shall be repaired.	"How to troubleshoot the following message in Windows XP: A network cable is unplugged", see http://support.microsoft.com/kb/910389/en-us

Warning Message Texts	Recommend	Reference
Discards are the packets received that contained errors or could not be processed. The acceptable number of discards is zero or a low number near to zero (compared to the total number of transferred bytes).	Run in the command prompt the command "netstat -e". This displays the statistic summary for all network adapters. A detailed statistic per network adapter can be obtained by the command "netsh interface ip show interface [adapter-index-number]".	Microsoft Technet Article "Netstat". See http://technet.microsoft.com/en-us/library/cc940097.aspx
Errors indicate packets that are damaged, including packets sent by the local computer that were damaged while in the buffer. The acceptable number of discards is zero or a low number near to zero (compared to the total number of transferred bytes).	Run in the command prompt the command "netstat -e". This displays the statistic summary for all network adapters. A detailed statistic per network adapter can be obtained by the command "netsh interface ip show interface [adapter-index-number]".	Microsoft Technet Article "Netstat". See http://technet.microsoft.com/en-us/library/cc940097.aspx

Windows Domain Check

DC Diagnostic Check

Error Message Texts	Recommend	Reference
Errors detected by the Dcdiag Tool need to be evaluated carefully by a specialist who is experienced in Windows domain administration. As a first help for interpretation, the Microsoft Technet Article, which is mentioned in the ErrorReference, is recommended. For additional help, you may use an internet search engine like Google or Bing, by searching for the keywords dcdiag and the name of the failed test, e.g.: dcdiag NetLogons failed	Run the command "dcdiag" in a command prompt on every domain controller. Note: On Windows Server 2003, the Dcdiag tool is not included in the standard installation, but it is included in the Microsoft Windows Server 2003 Support Tools. The Dcdiag tool is already integrated in Windows Server 2008. - Analyze carefully the text output from Dcdiag.	Microsoft Technet Articles: "Dcdiag", see http://technet.microsoft.com/en-us/library/cc731968%28WS.10%29.aspx and "Dcdiag Examples", see http://technet.microsoft.com/de-de/library/cc758753%28WS.10%29.aspx

Warning Message Texts	Recommend	Reference
This can happen, if the Windows Time Service is stopped, or the DC is not the Time Master. Only if this is the result of intentional configuration (800xA Time Synchronization), it is not to be assessed as an error. A detailed verification is required.	Run the command "dcdiag" in a command prompt on every domain controller. Note: On Windows Server 2003, the Dcdiag tool is not included in the standard installation, but it is included in the Microsoft Windows Server 2003 Support Tools. The Dcdiag tool is already integrated in Windows Server 2008. - Analyze carefully the text output from Dcdiag and check against the time synchronization concept for the 800xA system. Error messages regarding the time service or time synchronization can be ignored, if the DC is not the SNTP time master.	Microsoft Technet Articles: "Dcdiag", see http://technet.microsoft.com/en-us/library/cc731968%28WS.10%29.aspx and "Dcdiag Examples", see http://technet.microsoft.com/de-de/library/cc758753%28WS.10%29.aspx

DNS Name Resolution Check

Error Message Texts	Recommend	Reference
Since 800xA version SV 5.0 SP2, all network adapters shall be configured with parameters for the DNS Server IP Addresses. For older 800xA versions, this shall only be done for the Client/Server network adapters. One or more network adapter has been found where these settings are missing.	Configure the network adapter settings in accordance to section "General DNS configuration in each node" of 3BSE034463-510 A for SV 5.1; or to the corresponding section in previous document versions. Heed "Table 12" of this document as a typical configuration example.	*System 800xA Network Configuration, (3BSE034463*)*
A DNS Server, which is configured as Alternate DNS Server, fails to resolve the IP address of the host computer.	Verify the correct IP Address and DNS Server functionality. Run in CMD the command "nslookup COMPUTER DNS", where COMPUTER is the own 800xA Computer Name, and DNS is the IP Address of the Alternate DNS Server.	*System 800xA Network Configuration, (3BSE034463*)*
A DNS Server, which is configured as a third DNS Server, fails to resolve the IP address of the host computer. This is often found as a result of wrong network configuration, when the third DNS Server a server outside of the 800xA domain in the plant network.	If an external DNS Server in the plant network needs to be included in the 800xA domain name resolution, configure the external DNS Server as a Forwarder in the 800xA DNS Server.	Microsoft TechNet Article "Configure a DNS server to use forwarders". For Windows Server 2003, see http://technet.microsoft.com/en-us/library/cc773370%28WS.10%29.aspx For Windows Server 2008, see http://technet.microsoft.com/en-us/library/cc754941.aspx

Warning Message Texts	Recommend	Reference
A DNS Server, which is configured as Preferred DNS Server, fails to resolve the IP address of the host computer.	Verify the correct IP Address and DNS Server functionality. Run in CMD the command "nslookup COMPUTER DNS", where COMPUTER is the own 800xA Computer Name, and DNS is the IP Address of the Preferred DNS Server.	*System 800xA Network Configuration, (3BSE034463*)*

Windows Check

Auto-Start Processes Check

Error Message Texts	Recommend	Reference
A desktop manager feature in an nVidia graphic card application is installed. With some drivers for nVidia graphic cards this has been reported as not compatible with 800xA applications. See details in the ErrorReference document.	Check the detailed results for the name of the auto-start command. Run the Windows program "msconfig.exe", select the "Startup" tab, and deselect the referenced Startup Item(s). Then reboot the computer. After reboot, a message pops up from MSConfig. Select "Do not show me that message again" and acknowledge.	ABB Product Bulletin "800xA, PPA, nVidia graphic cards application may cause Workplace freeze", (3BSE041032)

Warning Message Texts	Recommend	Reference
Some auto-start programs might be useless, because, for example, they try to connect to the internet repetitively for automatic updates. This will fail in most cases, because of missing internet connection.	Check the detailed results for the name of the auto-start command. Run the Windows program "msconfig.exe", select the "Startup" tab, and deselect the referenced Startup Item(s). Then reboot the computer. After reboot, a message pops up from MSConfig. Select "Do not show me that message again" and acknowledge.	Service support experience, no written documentation is available.

Mandatory Third Party Software Installations

Error Message Texts	Recommend	Reference
The .NET software from Microsoft is required to be installed for all 800xA systems since SV 5.0 SP2. It is not found to be installed in the actual service pack version.	In 800xA SV 5.1 follow the section "800xA Common Third Party Install Tool" in the Installation Manual. In SV 5.0 SP2 follow the section ".NET Framework 3.5" in the Installation Manual.	*System 800xA Installation, (3BSE034678*)*
The .NET software from Microsoft is required to be installed for all 800xA systems since SV 5.0 SP2. A Hotfix, which repairs some known problems, is not installed.	Download and install the Hotfix from Microsoft web site: http://code.msdn.microsoft.com/KB967634/Release/ProjectReleases.aspx?ReleaseId=3248	Microsoft KB967634. See http://support.microsoft.com/kb/967634/en-us
Web Services Enhancements (WSE) for Microsoft .NET is a mandatory add-on to Microsoft Visual Studio. It is required to be installed for PG2 Graphics in all 800xA versions of SV 5.1.	Follow the section "800xA Common Third Party Install Tool" in the Installation Manual.	*System 800xA Installation, (3BSE034678*)*

Error Message Texts	Recommend	Reference
Web Services Enhancements (WSE) for Microsoft .NET is a mandatory add-on to Microsoft Visual Studio. It is required to be installed for PG2 Graphics in the 800xA versions of SV 5.0 SP2.	Follow the section ".NET Framework 3.5" in the Installation Manual.	*System 800xA Installation, (3BSE034678*)*
The Microsoft XML parser is required for 800xA. It must be installed in the actual version.	In 800xA SV 5.1 follow the section "800xA Common Third Party Install Tool" in the Installation Manual. In SV 5.0 SP2 follow the section "MSXML 4.0 with SP2" in the Installation Manual.	*System 800xA Installation, (3BSE034678*)*
The Microsoft XML parser is required for 800xA. It must be installed in the actual version.	In 800xA SV 5.1 follow the section "800xA Common Third Party Install Tool" in the Installation Manual. In SV 5.0 SP2 run from the 800xA Installation DVD the file "msxml6_x86.msi" on DVD 1\3rd_Party_SW\Microsoft.	*System 800xA Installation, (3BSE034678*)*
The Microsoft Hotfix KB896559 fixes critical bugs in the Windows Common Controls Comctl32.ocx.	Download and install the Hotfix from the Microsoft web site http://www.microsoft.com/downloads/details.aspx?FamilyId=25437D98-51D0-41C1-BB14-64662F5F62FE	Microsoft Knowledge Base article 896559. See http://support.microsoft.com/kb/896559/en-us

Error Message Texts	Recommend	Reference
The ABB provided installation package "MS08-070 1.2 Installation for System 800xA" needs to be installed on ALL node types (all nodes in a system) after all 800xA products are installed and also after each new revision (i.e. rollups).	Download and install the installation package 3BSE057818 "MS08-070 1.2 Installation for System 800xA" (or later version), which is available on ABB Library/Solutions Bank.	Product Bulletin 3BSE055000 "System 800xA All versions, Correction of vulnerable OCX files used in 800xA"; and Microsoft Knowledge Base article KB932349, see http://support.microsoft.com/kb/932349/en-us
Microsoft Office (especially Excel and Word) shall be installed in a version which has been tested and is released with the according 800xA version. This has been found to be not fulfilled.	Install the correct Office version, or install the appropriate Service Pack.	*Third Party Software System 800xA, (3BUA000500*)*

Warning Message Texts	Recommend	Reference
The Microsoft Hotfix KB896559 fixes critical bugs in the Windows Common Controls Comctl32.ocx.	Download and install the Hotfix from the Microsoft web site http://www.microsoft.com/downloads/details.aspx?FamilyId=25437D98-51D0-41C1-BB14-64662F5F62FE	Microsoft Knowledge Base article 896559. See http://support.microsoft.com/kb/896559/en-us
The ABB provided installation package "MS08-070 1.2 Installation for System 800xA" needs to be installed on ALL node types (all nodes in a system) after all 800xA products are installed and also after each new revision (i.e. rollups).	Download and install the installation package 3BSE057818 "MS08-070 1.2 Installation for System 800xA" (or later version), which is available on ABB Library/Solutions Bank.	Product Bulletin 3BSE055000 "System 800xA All versions, Correction of vulnerable OCX files used in 800xA"; and Microsoft Knowledge Base article KB932349, see http://support.microsoft.com/kb/932349/en-us

Warning Message Texts	Recommend	Reference
Microsoft has released some cumulative time zone updates for Microsoft Windows. To ensure proper daylight saving time changes, it is recommended to install the latest one.	If any Microsoft Knowledge Base Articles referenced in the below indicates that time zone, in which the 800xA system is running, is concerned, then download and install this update. - Please heed also the results of the Performance "NlsSystemInfo", which gives information about the DST time changes in the 800xA System.	Microsoft Knowledge Base Articles for the following Time Zone Updates: KB928388, KB931836, KB933360, KB942763, KB951072, KB955839, KB970653, KB976098, KB979306, KB981793
Microsoft Office 2003 offers an XML MIME filter as a registered MIME protocol handler. To avoid problems with process resources, the usage of this filter should disabled. It is reported not to be disabled.	Apply the workaround which is described in the Microsoft Knowledge Base Article 841532.	*Third Party Software System 800xA, (3BUA000500*)*; and Microsoft KB841532, see http://support.microsoft.com/kb/841532/en-us
The Microsoft Office 2003 Update KB907417 corrects a potential problem. It is reported not to be installed.	Download and install the update from http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=10624	*Third Party Software System 800xA, (3BUA000500*)*; and Microsoft KB841532, see http://support.microsoft.com/kb/907417/en-us

Mandatory System Specific Regional and Time Zone Settings

Error Message Texts	Recommend	Reference
It is a demand for all 800xA System installations that the Windows System Locale (in new Windows versions called "Current format") must be "English (United States)". This is not heeded by the current installation.	Apply the instructions in section "Regional and Language Options" of the installation manual.	*System 800xA, Automated Installation, (3BSE034679*)*

Warning Message Texts	Recommend	Reference
The occurrence time for DST change from winter to summer is the same as from summer to winter.	If a DST time switch is required, check and correct the Windows time zone setting.	*System 800xA, Automated Installation, (3BSE034679*)*

Mandatory User Specific Regional Settings

Error Message Texts	Recommend	Reference
The regional settings of the Windows accounts for the 800xA Service user and the 800xA Installer user must be set to use the English (United States) format. It is reported that this does not fit.	For all users, except operators, set the regional and language options in accordance to the Installation Document.	*System 800xA, Automated Installation, (3BSE034679*)*
The decimal symbol for punctuation in Windows must be set to a dot for all 800xA users in all languages. This is not heeded for one or more users.	For all users set the regional and language options in accordance to the Installation Document.	*System 800xA, Automated Installation, (3BSE034679*) and System 800xA clarifications regarding regional settings and language support (3BSE041492).*

Warning Message Texts	Recommend	Reference
The regional settings of the Windows accounts for all users, except for operators, must be set to use the English (United States) format. Users with other settings than English are allowed, but must be validated to have no engineering or administrative user roles.	Verify that only operator users are configured with a non English language format. Compare to the section "Regional and Language Options" in the installation document.	*System 800xA, Automated Installation, (3BSE034679*) and System 800xA clarifications regarding regional settings and language support (3BSE041492).*
A dot is configured used as grouping symbol for numbers. This is not recommended, because the dot shall be used as decimal punctuation symbol.	For all users set the regional and language options in accordance to the Installation Document.	*System 800xA, Automated Installation, (3BSE034679*) and System 800xA clarifications regarding regional settings and language support (3BSE041492).*
In Windows 2003 and Windows XP, the Windows short date format shall be set to "MM/dd/yyyy". A different format is detected. Please heed the reference documentation for permitted format settings.	If an NLS language package is installed, check 2PAA102031 for supported formats in section "Number and Date Format Settings on operator clients". Otherwise set the short date format in accordance with 3BSE034678 installation manual.	*System 800xA, Automated Installation, (3BSE034678*) and System 800xA clarifications regarding regional settings and language support (3BSE041492) and Language Package Installation, (2PAA102031).*

Configuration of Time Synchronization Protocols

Error Message Texts	Recommend	Reference
Every 800xA computer, including dedicated domain controllers, must be time synchronized; either by the 800xA software, or by the Windows SNTP time synchronization. No time synchronization is reported to be active.	Configure the Windows time synchronization settings in accordance to the reference document.	*System 800xA, Automated Installation, (3BSE034679*)*
Every 800xA computer, including dedicated domain controllers, must be time uniquely synchronized; either by the 800xA software, or by the Windows SNTP time synchronization. A collision of two different time synchronization mechanisms is reported to be active.	Configure the Windows time synchronization settings in accordance to the reference document.	*System 800xA, Automated Installation, (3BSE034679*)*

Warning Message Texts	Recommend	Reference
It is reported that either a connectivity server, which is time synchronized from Harmony or Melody, runs with a time daemon priority which is too low, or that it is not acting as an 800xA time service server.	Configure the Harmony / Melody time synchronization settings in accordance to the reference document.	*800xA for AC 870P / Melody, Configuration, (3BDD011741*) and 800xA for Harmony, Configuration, (3BUA000157*)*

Uniqueness of Computer System ID's.

Error Message Texts	Recommend	Reference
Two or more computers (excluding domain controllers) with identical Windows System Identifiers (SID) are reported to exist in the system. This happens typically by cloning an installed Windows operating system onto another computer hardware, by means of disk duplication software such as Norton Ghost or Acronis Backup & Restore.	Apply the Microsoft "Sysprep" tool to renew the duplicated SID's. Be aware that the Windows license string must also be re-entered. Heed the referenced Microsoft documents.	Mark Russinovich: "The Machine SID Duplication Myth" on http://blogs.technet.com/b/markrussinovich/archive/2009/11/03/3291024.aspx ; Microsoft Knowledge Base Article KB162001 on http://support.microsoft.com/kb/162001 and Microsoft Knowledge Base Article KB302577 "How to use the Sysprep tool to automate successful deployment of Windows XP" on http://support.microsoft.com/kb/302577/en-us. For Windows 7, also see http://technet.microsoft.com/en-us/windows/ee530017

Resources Check

Windows Processes

Warning Message Texts	Recommend	Reference
A Windows process is detected which is using more than 1.8 GB virtual memory. This is close to the maximum allowed limit of 2 GB.	Analyze if the memory usage increases continuously. Monitor the process memory allocation for some days or weeks, preferably by using the Windows perfmon.exe tool. Maybe it is necessary to reboot the computer. Note that Microsoft SQL Server (sqlservr.exe) is well known to allocate high amounts of virtual memory, typically more than 1.5 GB.	Microsoft MSDN article "Memory Limits for Windows Releases", on http://msdn.microsoft.com/en-us/library/windows/desktop/aa366778%28v=vs.85%29.aspx

Windows Service States

Error Message Texts	Recommend	Reference
Windows services which have the startup type set to "Automatic" are expected to remain in the Running state. Instead, there is one or more Windows service reported to be stopped.	If an ABB service is concerned, analyze if dump files or Dr. Watson dump files exist. Otherwise search in the internet for the purpose of the service. Start the service again, or reboot the computer, and watch the behavior in the future.	Microsoft TechNet Article 832017 "Service overview and network port requirements for the Windows Server system" on http://support.microsoft.com/kb/832017/en-us, and "Services Guide for Windows XP" on http://www.theeldergeek.com/services_guide.htm

Warning Message Texts	Recommend	Reference
Windows services which have the startup type set to "Automatic" are expected to remain in the Running state. Instead, there is one or more Windows service reported to be paused.	If an ABB service is concerned, analyze if dump files or Dr. Watson dump files exist. Otherwise search in the internet for the purpose of the service. Start the service again, or reboot the computer, and watch the behavior in the future.	Microsoft TechNet Article 832017 "Service overview and network port requirements for the Windows Server system" on http://support.microsoft.com/kb/832017/en-us, and "Services Guide for Windows XP" on http://www.theeldergeek.com/services_guide.htm

Windows Time Synchronization

Error Message Texts	Recommend	Reference
A computer is reported to have an actual Windows date deviation larger than one day.	Configure the Windows time synchronization settings in accordance to the reference document. Also check the correct time zone settings.	*System 800xA Network Configuration, (3BSE034463*)*

Network Check

Throughput Performance to all connected computers

Error Message Texts	Recommend	Reference
Network performance measurements have been taken by copying of large files on peer to peer connections between computers, including redundant RNRP network paths. One or more copies show very poor results, which is below 10% of the mean value of all measurements.	It is likely that this is caused by a Duplex Mismatch, which is an inconvenient setting duplex and speed parameters in network components. Validate and, if necessary, correct these settings for the concerned network adapters, switch ports, transceivers or other network components. In some cases this might also be caused by the Windows Firewall Service not working. In this case, start or restart it.	*System 800xA Network Configuration, (3BSE034463*)* and "Duplex Mismatch" on Wikipedia, see http://en.wikipedia.org/wiki/Duplex_mismatch
Network performance measurements have been taken by copying of large files on peer to peer connections between computers, including redundant RNRP network paths. One or more copies show very poor results, which is below 25% of the mean value of all measurements.	Validate and, if necessary, correct the network duplex and speed settings for the concerned network adapters, switch ports, transceivers or other network components. It may be useful to repeat the test, because the test result is influenced by factors like CPU load, hard disk performance or others. For 100 Mbit networks, a throughput of roughly 4-10 Mbyte/sec is normal. For 1 Gbit networks a throughput of about 20-80 Mbyte/sec can be expected, which is considerably influenced by hard disk performance.	*System 800xA Network Configuration, (3BSE034463*)*

Throughput Performance to all connected AC 800M Controllers

Error Message Texts	Recommend	Reference
Network performance measurements have been taken by invoking the RNRP Utility (RNRP Fault Tracer) with option 9. The measured network throughput is below 0.1 Mbit/sec.	Repeat the test manually by invoking the RNRP Utility on the connected connectivity server. Use option 9 and enter the controller's IP-Address. If the result remains very low, or errors are reported (e.g. "…Message(s) Lost" or "No reply from target!"), check the controller's CPU load by calling its SystemDiagnostics faceplate. If the CPU load is very high (about 90% or higher), perform some engineering which tries to reduce the load. Also check the network connection and concerned network components. Note that sometimes it can happen that RNRP test messages are lost, if the network connection includes gateways.	*System 800xA Network Configuration, (3BSE034463*) and System 800xA, System Guide Technical Data and Configuration, (3BSE041434*)*

Warning Message Texts	Recommend	Reference
Network performance measurements have been taken by invoking the RNRP Utility (RNRP Fault Tracer) with option 9. The measured network throughput is below 1 Mbit/sec.	Repeat the test manually by invoking the RNRP Utility on the connected connectivity server. Use option 9 and enter the controller's IP-Address. If the result remains low, check the controller's CPU load by calling its SystemDiagnostics faceplate. If the CPU load is very high (about 90% or higher), perform some engineering which tries to reduce the load. Also check the network connection and concerned network components. Note that sometimes it can happen that RNRP test messages are lost, if the network connection includes gateways.	*System 800xA Network Configuration, (3BSE034463*)*

Network Diagnostic Check

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Automatic Private IP Addressing (APIPA) Address Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Verify if the failure is still reported, and check the message details. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft TechNet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Bindings Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Verify if the failure is still reported, and check the message details. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft TechNet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Domain Controller Discovery Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:DsGetDc /v". Check the global text results. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Domain Controller List Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:DcList [/v]".Check the global text results. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The DNS Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:DNS /v". Check the global text results. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Domain Membership Test has failed.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:member /v". Check the global text results. Verify that the NetLogon Service is started, eventually restart it. Check for Windows error events from Netlogon or Kerberos. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The IP Loopback Test has failed. This test pings the IP loopback address 127.0.0.1 for each adapter.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:iploopbk /v". Check the global text results. If the error persists, check the network adapter settings and hardware. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The Kerberos Test has failed. This test checks whether the Kerberos package information (tickets) is up-to-date. Note that this test in most cases cannot be executed remotely.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:kerberos /v". Check the global text results. Check for Windows error events from Netlogon or Kerberos. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The LDAP Test has failed. This test contacts all available domain controllers and determines which LDAP authentication protocol is in use.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:ldap [/v]". Check the global text results. Check for Windows error events from Netlogon or Kerberos. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The NetBTName Test has failed. This test checks the availability of some common Netbios related services.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test: NbtNm". Check the global text results. Warnings can be ignored, because these services are not required for 800xA. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The NetBT Transport Test has failed. This test checks the protocols which are related to Netbios over TCP/IP.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:NetBTTransports". Check the global text results. Warnings can be ignored, because these protocols have low importance in 800xA. You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en - us/library/cc731434%28WS.10 %29.aspx

Error Message Texts	Recommend	Reference
The Netdiag command-line diagnostic tool helps to isolate networking and connectivity problems by performing a series of tests to determine the state of your network client. The NetBT Transport Test has failed. This test checks the protocols which are related to Netbios over TCP/IP.	Log in on the concerned computer, open a command prompt, and repeat the test locally by executing "netdiag.exe". You need to have the correct version of Windows Support Tools installed, or have the netdiag.exe from this locally available. Run a verbose test by executing "netdiag /test:browser". Check the global text results. Execute the command "net view" and check if this retrieves a list of all available computers. If this fails, restart the Computer Browser Service (optionally also on the domain controllers). You may search for hints and explanations on Microsoft.com, or in the internet.	Microsoft Technet Article "Netdiag" on http://technet.microsoft.com/en-us/library/cc731434%28WS.10%29.aspx

800xA Aspect Directory Check

Database Structure Consistency

Error Message Texts	Recommend	Reference
The 800xA tool "afwsct.exe" reports a broken or invalid parent-child relationship for two or more objects in the Aspect Directory Database.	As preventive action, take an 800xA Full Backup and check carefully the backup log file for errors and warnings. Contact ABB Service Support for trouble shooting. Note: A repair should not be attempted on a system in operation!	*System 800xA Operations 5.0 and 5.0 SP1, Consistency check guideline, (3BSE048683*) and System 800xA Operations 4.1, Consistency check guideline, (3BSE046920).*

Database Replication, Size and Licensing

Error Message Texts	Recommend	Reference
The 800xA tool "afwsysinfo.exe -csd" reports differences in the databases between the redundant Aspect Servers. In case of fatal errors, the column "Aspect DB Synch" in the detailed results contains the error message.	For verification, repeat the check result manually by opening a command prompt on every Aspect Server, and executing "afwsysinfo -csd". The good result must show the text "No differences found" - otherwise a detailed error message is given. In case of sustained error, take an 800xA Full Backup as preventive action, and check carefully the backup log file for errors and warnings. Also check 800xA Service Structure - Services - Aspect Directory, Services - Service Definition Aspect - Service Tab - State of the services. If one server is in Error state and the other(s) not, you can, as an immediate attempt to repair, reboot the failed server. Contact ABB Service Support for error analysis and trouble shooting.	*System 800xA, System Guide, Technical Data, section Redundancy Switchover Time, (3BSE041434*) and System 800xA Operations 3, 4; Considerations using 1oo2 Aspect Server Redundancy, (3BSE045529).*

Warning Message Texts	Recommend	Reference
As a result of heavy and/or long periods of engineering the Aspect Directory database gets fragmented, because deleted database records normally are not removed from the hard disk file. The amount of unusable disk space has exceeded 50% of the file size.	Defragment the databases, following the reference document. Note that this is only possible in 800xA Systems with redundant Aspect Servers and healthy databases.	*System 800xA Operations,* Fragmented Aspect Directory *Database, (3BSE059394*)*
The number of objects in the Aspect Directory Database has been found to exceed a number of 200 000, which is against the recommendation described in ABB document 3BSE051887.	Consider the reference documentation 3BSE051887.	*System 800xA Operations, (3BSE051887*)* - A large number of aspect categories makes AfwADServer process size reach 2GB"
The number of categories in the Aspect Directory Database has been found to exceed a number of 100 000, which is against the recommendation described in ABB document 3BSE051887.	Consider the reference documentation 3BSE051887.	*System 800xA Operations, (3BSE051887*)* - A large number of aspect categories makes AfwADServer process size reach 2GB"
The number of used tags in the 800xA System exceeds 95% of the number of licensed tags.	If additional engineering activities are required, renew the licensing.	*System 800xA, System Guide Ordering and Licensing, (3BSE041435*)*
The license expiration for the 800xA System is limited to a date which will be reached in about three months.	Check and renew the licensing.	*System 800xA, System Guide Ordering and Licensing, (3BSE041435*)*

Error Log Check

Melody Connectivity Servers

Error Message Texts	Recommend	Reference
The System Error Log (syslog_err.log or syslog_err.log.old) on the Melody Connectivity Server has reported failures or a lack of resources. Message details are found in the detailed result data.	Check the error log file(s) in detail. They are found in the directory C:\Program Files\ABB Industrial IT\OperateIT\Base. Make at least a quick check of the faceplates of the "Melody Server" objects in the "Melody Network". If the reported errors say "The non-page pool is running low", contact ABB Service Support.	*800xA for AC 870P / Melody Configuration, (3BDD011741*)*

Windows Event Logs

Error Message Texts	Recommend	Reference
The Windows Event Log has reported errors which have occurred since the last computer reboot. Please check the logs for details.	Check the detailed result table, or directly on the concerned computer by invoking "eventvwr.exe". Give special attention to messages from the sources Kerberos, Netlogon, Ntfs and DCOM; but events from any other sources might also be important. If messages occur very frequently, analyze and try to fix them first. In cases of doubt, contact ABB Service Support.	Articles found by searching for message text on "search.microsoft.com", or searching on "www.eventid.net" by entering the Event ID and Event Source.

Appendix B System 800xA Core Fingerprint Software Status Report

This section introduces the examples of System 800xA Core Fingerprint Software Status reports.

Benchmark Gap Analysis

The summary of findings based on the technical finding´s checklist is found in this section. Figure 6 indicates the overall status of the findings.

	Good	Notes	Questionable	Problems
ABB Software	1455	0	1	0
Microsoft Software	49	0	2544	0
Microsoft Updates	30	0	489	5046
Third Party Applications	0	0	562	49
Total	1534	0	3596	5095
Goal	10225	0	0	0

Figure 6. Alarm Benchmark Summary Per Evaluation Module

The table lists the following:

- ABB software

- Microsoft software

- Microsoft updates

- Third party applications

The goal of the benchmark gap analysis is to have no questionable and problematic softwares.

Technical Findings Checklist

ABB Software

	Outcome	Done?	Link to Chapter
ABB 800xA for Harmony 5.1.0 RU1	Warnings		7.1.2.1.1
ABB 800xA for Harmony 5.1.0/0	Warnings		7.1.2.1.2
ABB 800xA System Installer 5.1.0/1	Warnings		7.1.2.1.3
ABB AC 800M Connect VB Graphics Extension 5.1.0/1	Warnings		7.1.2.1.4
ABB Diagnostics Collection Tool 5.1.2-3	Warnings		7.1.2.1.5
ABB Diagnostics Collection Tool Plugins 5.1.2-3	Warnings		7.1.2.1.6

Figure 7. ABB Software

Each point in the checklist is controlled at the System 800xA Core Software Status Fingerprint report service. The column "Outcome" from Figure 7 indicates the status of findings as follows:

- **OK =**   No problems found.

- **Warnings =**   May lead to problems later on.

- **Problem =** Problems that should be corrected.

Microsoft Software

	Outcome	Done?	Link to Chapter
Windows 7 Professional N Service Pack 1	Warnings		7.1.2.2.1

Figure 8. Microsoft .NET Framework 3.5 SP1 with Wrong/Missing Version

Each point in the checklist is controlled at the System 800xA Core Software Status Fingerprint report service. The column "Outcome" from Figure 8 indicates the status of findings as follows:

- **OK =**   No problems found.

- **Warnings =**   May lead to problems later on.

- **Problem =** Problems that should be corrected.

Third Party Software

	Outcome	Done?	Link to Chapter
Internet Explorer 8	Problems		7.1.2.3.1
Microsoft .NET Framework 3.5 SP1	Problems		7.1.2.3.2
Microsoft SQL Server 2008 Setup Support Files	Problems		7.1.2.3.3
Microsoft Visual C++ 2008 Redistributable - x86 9.0.30729.4148	Problems		7.1.2.3.4

Figure 9. Third party software technical findings

Each point in the checklist is controlled at the System 800xA Core Software Status Fingerprint report service. The column "Outcome" from Figure 9 indicates the status of findings as follows:

- **OK =**   No problems found.

- **Warnings =**   May lead to problems later on.

- **Problem =** Problems that should be corrected.

Analysis of System 800xA Core Fingerprint Software Status Report

ABB Software

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

ABB Diagnostics Collection Tool Plugins 5.1.2-3					
Node	Installed Version	Base Version	Node	Installed Version	Base Version
NSRVCNT2-1	5.1.2.56	5.1.2.58	NSRVCNT2-2	5.1.2.56	5.1.2.58
NSRVASP2-1	5.1.2.56	5.1.2.58	NCLTSUP2-1	5.1.2.56	5.1.2.58
NSRVASP2-2	5.1.2.56	5.1.2.58	NCLTSUP1-1	5.1.2.56	5.1.2.58
NSRVMAN2-1	5.1.2.56	5.1.2.58	NCLTSUP5-1	5.1.2.56	5.1.2.58
NCLTSUP4-1	5.1.2.56	5.1.2.58			

Figure 10. Software Status Report - ABB Software

Installed Version column indicates versions of software installed in the nodes in plant. Software versions that is shown in **Base Version** column are recommended versions that needs to be installed in the nodes in the plant. Ensure that all nodes in the plant have software installed as per **Base Version**.

The **Installed Version** is displayed in Yellow color with the message "*Missing client component/Server not found*" if the **Base Version** is not mandatory. Figure 11 shows the status that is missing. This means the required client software was not found or the client software was identified but corresponding server node type was not detected.

ABB 800xA for Harmony 5.1.0/0					
Node	Installed Version	Base Version	Node	Installed Version	Base Version
NSRVCNT2-1	Missing client component/Server not found	5.1.0.26	NSRVASP2-2	Missing client component/Server not found	5.1.0.26
NSRVASP2-1	Missing client component/Server not found	5.1.0.26	NSRVCNT2-2	Missing client component/Server not found	5.1.0.26

Figure 11. Software Status Report - ABB Software

Microsoft Software

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Windows 7 Professional N					
Node	Installed Version	Base Version	Node	Installed Version	Base Version
NCLTSUP2-1	Windows 7 Professional N		NCLTSUP1-1	Windows 7 Professional N	
NCLTSUP5-1	Windows 7 Professional N		NCLTSUP4-1	Windows 7 Professional N	

Figure 12. Microsoft .NET Framework 3.5 SP1 with Wrong/Missing Version

Installed Version column in Figure 12 indicates versions of software installed in nodes in the plant. Software versions that is shown in **Base Version** column are recommended versions that needs to be installed in the nodes in the plant. Ensure that all nodes in the plant have software installed as per **Base Version**.

Security Updates

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Installed Version column indicates versions of software installed in nodes in the plant. Software versions that is shown in **Base Version** column are recommended versions that needs to be installed in the nodes in the plant. Ensure that all nodes in the plant have software installed as per **Base Version**.

Third Party Software

This section lists all the softwares that are missing and version mismatches. The listing is against the node and the base version.

Internet Explorer 8					
Node	**Installed Version**	**Base Version**	**Node**	**Installed Version**	**Base Version**
NSRVCNT2-1		8.0	NSRVCNT2-2		8.0
NSRVASP2-1		8.0	NCLTSUP2-1		8.0
NSRVASP2-2		8.0	NCLTSUP1-1		8.0
NSRVMAN2-1		8.0	NCLTSUP5-1		8.0
NCLTSUP4-1		8.0			

Figure 13. HP Array Configuration Utility with Wrong/Missing Version

Installed Version column indicates versions of software installed in nodes in the plant. Software versions that is shown in **Base Version** column are recommended versions that needs to be installed in the nodes in the plant. Ensure that all nodes in the plant have software installed as per **Base Version**.

Revision History

This section provides information on the revision history of this User Manual.

ℹ The revision index of this User Manual is not related to the actual product System Revision.

Revision History

The following table lists the revision history of this User Manual:

Revision Index	Description	Date
-	Published for BU CT Service Products	March 2012
A	First version published for BU CT Service Products	July 2012
B	Second version published for BU CT Service Products	August 2012
C	Third version published for BU CT Service Products	December 2012
D	Fourth version published for BU CT Service Products	February 2013

Updates in Revision Index A

Updated Section/Sub-section	Description of Update
Appendix B- System 800xA Core Fingerprint Software Status Report	Analysis of System 800xA Core Fingerprint Report section has been updated.

Updates in Revision Index B

Updated Section/Sub-section	Description of Update
Section 1, Introduction	Added information about the System 800xA Service Data Collector Tool.
Seciton 3, System 800xA Core Fingerprint Report for Software Status	Updated information about the color-code states in the report.
Appendix B- System 800xA Core Fingerprint Report for Software Status	Updated information about the color-code states in the report.

Updates in Revision Index C

Updated Section/Sub-section	Description of Update
All sections	Updates naming conventions and references.

Updates in Revision Index D

Updated Section/Sub-section	Description of Update
All sections	Names of the tools have been updated.

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